



279398

**Five-Year Review Report**  
**Third Five-Year Review Report**  
**for**  
**Velsicol Chemical Corporation Site**  
**St. Louis**  
**Gratiot County, Michigan**  
**September 2007**  
**PREPARED BY:**  
**United States**  
**Environmental Protection Agency**  
**Region 5**

Approved by:

*Richard C. Karl*

Richard C. Karl, Director  
Superfund Division  
U.S. EPA, Region 5

Date:

*9-24-07*

{This page intentionally left blank.}

# Five-Year Review Report

## Table of Contents

List of Acronyms .....	5
Executive Summary .....	7
Five-Year Review Summary Form .....	9
<b>I. Introduction .....</b>	<b>13</b>
The Purpose of the Review .....	13
Authority for Conducting the Five-Year Review .....	13
Who Conducted the Five-Year Review .....	13
Other Review Characteristics .....	14
<b>II. Site Chronology .....</b>	<b>14</b>
<b>III. Background .....</b>	<b>15</b>
Physical Characteristics .....	15
Land and Resource Use .....	16
History of Contamination .....	16
Initial Response.....	17
Basis for Taking Action.....	22
<b>IV. Remedial Actions.....</b>	<b>22</b>
Remedy Selection .....	22
Remedy Implementation.....	23
Institutional Controls .....	26
System Operations/O&M.....	28
<b>V. Progress Since the Last Five-Year Review .....</b>	<b>29</b>
<b>VI. Five-Year Review Process.....</b>	<b>30</b>
Administrative Components of the Five-Year Review Process .....	30
Community Notification and Involvement .....	30
Document Review.....	31
Data Review .....	31
Site Inspection.....	32
Interviews.....	32

<b>VII. Technical Assessment</b>	33
<i>Question A:</i> Is the remedy functioning as intended by the decision documents?	33
<i>Question B:</i> Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of remedy selection still valid?	34
<i>Question C:</i> Has any other information come to light that could call into question the protectiveness of the remedy?	34
Technical Assessment Summary	35
<b>VIII. Issues</b>	36
<b>IX. Recommendations and Follow-up Actions</b>	36
<b>X. Protectiveness Statements</b>	38
<b>XI. Next Review</b>	39

#### **Tables (included in body of report)**

Table 1 – Chronology of Site Events
Table 2 – Institutional Controls Summary Table
Table 3 – Actions Taken Since the Last Five-Year Review
Table 4 – Issues
Table 5 – Recommendations and Follow-up Actions

#### **Figures**

Figure 1 – Site Location Map
Figure 2 – Site Overview
Figure 3 – DNAPL Observations During Remedial Activities
Figure 4 – OU2 Areas Capped with Clay or Covered with Fill
Figure 5 – Remedial Cells and Unremediated Areas

#### **Attachments**

Attachment 1 – Public Notice Ad, Morning Sun, March 25, 2007
Attachment 2 – Site Inspection Checklist
Attachment 3 – Public Notice Ads for Community Interviews, Morning Sun, April 29 & May 4, 2007

#### **Appendix**

Comments Received from the Community
--------------------------------------

## List of Acronyms

ATSDR	Agency for Toxic Substances and Disease Registry
CAG	Community Advisory Group
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act (1980)
CJ	consent judgment
DDT	dichlorodiphenyltrichloroethane
DNAPL	dense non-aqueous phase liquid
FS	feasibility study
FTL	Fruit of the Loom
HBB	hexabromobenzene
ICs	institutional controls
MCC	Michigan Chemical Corporation
MDEQ	Michigan Department of Environmental Quality
MDNR	Michigan Department of Natural Resources
MDPH	Michigan Department of Public Health
NAPL	non-aqueous phase liquid
NCP	National Contingency Plan
NPL	National Priorities List
NWI	NWI Land Management, Inc.
O&M	operation and maintenance
OU	operable unit
PBB	polybrominated biphenyls
pCBSA	para-chlorobenzene sulfonic acid
ppb	parts per billion
ppm	parts per million
RAOs	remedial action objectives
RCRA	Resource Conservation and Recovery Act
RI	remedial investigation
RI/FS	remedial investigation/feasibility study
ROD	Record of Decision
SARA	Superfund Amendments and Reauthorization Act of 1986
SMI	Source Migration Investigation
SVOCs	semi-volatile organic compounds
SWAC	surface weighted average concentration
TAG	Technical Advisory Group
TRIS	tris(2,3-dibromopropyl)phosphate
U.S. EPA	United States Environmental Protection Agency
UU/UE	unlimited use/unrestricted exposure
Velsicol	Velsicol Chemical Corporation
VOCs	volatile organic compounds

[This page intentionally left blank.]

## Executive Summary

The Velsicol Chemical Corporation site in St. Louis, Michigan, consists of two operable units (OUs). The prior remedy for the main plant site, which is part of OU1, was implemented under a 1982 Consent Judgment (CJ) and included installation of a containment system for the main plant site. The remedy for OU2, contaminated sediments and fish in the Pine River, was implemented pursuant to a 1999 Record of Decision (ROD) and included excavation and off-site disposal of DDT-contaminated sediments. Previous five-year reviews were completed in August 1997 and September 2002.

The assessment of this five-year review found that the site as a whole is not protective of human health and the environment. The protectiveness statements for each OU and the entire site are as follows:

**OU1:** The remedy at OU1 is not protective because the containment system implemented under the 1982 CJ does not meet the original design specifications, is not functioning as designed, and is not preventing the migration of contaminated groundwater from the main plant site. Some areas of the residential neighborhood adjacent to the main plant site have soil concentrations that exceed the State of Michigan's Part 201 direct contact criteria. In order to ensure protectiveness, the Superfund remedy selection process needs to be completed and a protective remedy implemented for OU1. The remedy selection process will include consideration of whether institutional controls are required in the short term and/or long term to ensure protectiveness of the remedy.

**OU2:** The remedy at OU2 is expected to be protective of human health and the environment once DDT levels in fish have decreased to safe levels. The successful attainment of the specified total DDT risk-based cleanup level in sediments should eventually result in safe DDT levels in fish and eventual elimination of the existing fish consumption advisories, but it will likely take some time to achieve that objective. Operation and maintenance of the NAPL collection system that was installed as an interim response action during the OU2 remedy must continue until a protective remedy is selected and implemented for OU1, to ensure that site contaminants from OU1 do not recontaminate the Pine River sediments. The need for institutional controls at OU2 is under review.

**SITE-WIDE:** The remedial action at OU2 is expected to be protective once DDT levels in fish have decreased to safe levels. However, because the remedy implemented at OU1 under the 1982 CJ is not protective, the site as a whole is not protective of human health and the environment. The remedy at OU1 is not protective because the containment system implemented under the 1982 CJ does not meet the original design specifications, is not functioning as designed, and is not preventing the migration of contaminated groundwater from the main plant site, and some areas of the adjacent residential neighborhood have soil concentrations that exceed the State of Michigan's Part 201 direct contact criteria. In order to ensure protectiveness, the Superfund remedy selection

process needs to be completed and a protective remedy implemented for OU1. Additionally, long-term protectiveness may require compliance with use restrictions that prohibit interference with remedy components, limit use of land and groundwater, and advise against fish consumption until standards are met. The remedy selection process will include consideration of whether institutional controls are required in the short term and/or long term to ensure the protectiveness of the remedy.

## Five-Year Review Summary Form

SITE IDENTIFICATION		
<b>Site name (from WasteLAN):</b> Velsicol Chemical Corporation (Michigan)		
<b>EPA ID (from WasteLAN):</b> MID000722439		
<b>Region:</b> 5	<b>State:</b> MI	<b>City/County:</b> St. Louis / Gratiot County
SITE STATUS		
<b>NPL status:</b> <input checked="" type="checkbox"/> Final <input type="checkbox"/> Deleted <input type="checkbox"/> Other (specify) _____		
<b>Remediation status</b> (choose all that apply): <input type="checkbox"/> Under Construction <input checked="" type="checkbox"/> Operating <input checked="" type="checkbox"/> Complete (Note: This site was designated as a construction completion site, but additional remedies were later determined to be necessary, both for OU2 (the river) and OU1 (the main plant site).)		
<b>Multiple OUs?*</b> <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<b>Construction completion date:</b> 09/25/1992 (date of preliminary close-out report)	
<b>Has site been put into reuse?</b> <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		
REVIEW STATUS		
<b>Lead agency:</b> <input checked="" type="checkbox"/> EPA <input type="checkbox"/> State <input type="checkbox"/> Tribe <input type="checkbox"/> Other Federal Agency _____		
<b>Author name:</b> Rebecca Frey		
<b>Author title:</b> Remedial Project Manager	<b>Author affiliation:</b> U.S. EPA	
<b>Review period:**</b> 02/28/2007 to 09/2007		
<b>Date of site inspection:</b> 09/07/2007		
<b>Type of review:</b> <div style="text-align: center; margin-top: 10px;"> <input type="checkbox"/> Post-SARA     <input checked="" type="checkbox"/> Pre-SARA     <input type="checkbox"/> NPL-Removal only  <input type="checkbox"/> Non-NPL Remedial Action Site     <input type="checkbox"/> NPL State/Tribe-lead  <input type="checkbox"/> Regional Discretion </div>		
<b>Review number:</b> <input type="checkbox"/> 1 (first) <input type="checkbox"/> 2 (second) <input checked="" type="checkbox"/> 3 (third) <input type="checkbox"/> Other (specify) _____		
<b>Triggering action:</b> <div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> Actual RA Onsite Construction at OU # _____  <input type="checkbox"/> Construction Completion  <input type="checkbox"/> Other (specify) _____ </div> <div> <input type="checkbox"/> Actual RA Start at OU# _____  <input checked="" type="checkbox"/> Previous Five-Year Review Report </div> </div>		
<b>Triggering action date (from WasteLAN):</b> 09/25/2002		
<b>Due date (five years after triggering action date):</b> 09/25/2007		

\* ["OU" refers to operable unit.]

\*\* [Review period should correspond to the actual start and end dates of the Five-Year Review in WasteLAN.]

## Five-Year Review Summary Form, cont'd.

### Issues:

- OU1 containment system is not functioning as designed and is not preventing migration of contaminated groundwater from main plant site
- pCBSA has been detected in city water supply wells at levels below drinking water standards, demonstrating that a contaminant migration pathway from main plant site exists
- Some areas in the residential neighborhood adjacent to main plant site have soil concentrations of PBB exceeding MDEQ Part 201 direct contact criteria
- The non-aqueous phase liquid (NAPL) collection system must be operated and maintained until protective remedy implemented for OU1 to ensure that site contaminants from OU1 do not recontaminate OU2
- DDT levels in fish have not yet been demonstrated to have decreased to safe levels, so no-consumption fish advisory remains in effect
- Long-term monitoring of DDT levels in fish and sediment has not yet begun following completion of the OU2 remedial action
- Implementing and maintaining institutional controls (ICs) may be required in the short term and/or long term to assure protectiveness of the remedy site-wide

### Recommendations and Follow-up Actions:

- Complete the FS, issue ROD, and implement remedy for OU1 to address failed containment system
- Continue monitoring city wells and sentry wells for pCBSA and other site-related contaminants; complete the FS, issue ROD, and implement remedy for OU1 to address off-site migration of contaminated groundwater
- Complete the FS, issue ROD, and implement remedy for OU1, including areas adjacent to main plant site, and conduct any necessary pre-design sampling
- Operate & maintain the NAPL collection system to prevent OU1 site contaminants from recontaminating OU2
- Keep no-consumption fish advisory in place until DDT levels in fish have been demonstrated to have decreased to safe levels
- Conduct long-term monitoring of DDT levels in fish and sediment
- If the ROD for OU1 determines ICs are necessary, establish ICs in accordance with ROD. The need for ICs at OU2 is under review.

### Protectiveness Statements:

- **OU1:** The remedy at OU1 is not protective because the containment system implemented under the 1982 CJ does not meet the original design specifications, is not functioning as designed, and is not preventing the migration of contaminated groundwater from the main plant site. Some areas of the residential neighborhood adjacent to the main plant site have soil concentrations that exceed the State of Michigan's Part 201 direct contact criteria. In order to ensure protectiveness, the Superfund remedy selection process needs to be completed and a protective remedy implemented for OU1. The remedy selection process will include consideration of whether institutional controls are required in the short term and/or long term to ensure protectiveness of the remedy.
- **OU2:** The remedy at OU2 is expected to be protective of human health and the environment once DDT levels in fish have decreased to safe levels. The successful attainment of the specified total DDT risk-based cleanup level in sediments should eventually result in safe DDT levels in fish and eventual elimination of the existing fish consumption advisories, but it will likely take some time to achieve that objective. Operation and maintenance of the NAPL collection system that was installed as an interim response action during the OU2 remedy must continue until a protective remedy is selected and implemented for OU1, to ensure that site contaminants from OU1 do not recontaminate the Pine River sediments. The need for institutional controls at OU2 is under review.

## Five-Year Review Summary Form, cont'd.

### Protectiveness Statements (cont'd):

**SITE-WIDE:** The remedial action at OU2 is expected to be protective once DDT levels in fish have decreased to safe levels. However, because the remedy implemented at OU1 under the 1982 CJ is not protective, the site as a whole is not protective of human health and the environment. The remedy at OU1 is not protective because the containment system implemented under the 1982 CJ does not meet the original design specifications, is not functioning as designed, and is not preventing the migration of contaminated groundwater from the main plant site, and some areas of the adjacent residential neighborhood have soil concentrations that exceed the State of Michigan's Part 201 direct contact criteria. In order to ensure protectiveness, the Superfund remedy selection process needs to be completed and a protective remedy implemented for OU1. Additionally, long-term protectiveness may require compliance with use restrictions that prohibit interference with remedy components, limit use of land and groundwater, and advise against fish consumption until standards are met. The remedy selection process will include consideration of whether institutional controls are required in the short term and/or long term to ensure the protectiveness of the remedy.

**Other Comments:** None.

Date of last Regional review of Human Exposure Indicator (from WasteLAN): 09/23/05  
Human Exposure Survey Status (from WasteLAN): Insufficient Data to Determine Human Exposure Control Status  
Date of last Regional review of Groundwater Migration Indicator (from WasteLAN): 03/01/2007  
Groundwater Migration Survey Status (from WasteLAN): Contaminated Groundwater Migration Not Under Control  
Ready for Reuse Determination Status (from WasteLAN): (this measure not yet in WasteLAN)

[This page intentionally left blank.]

# Five-Year Review Report

## I. Introduction

### The Purpose of the Review

The purpose of five-year reviews is to determine whether the remedy at a site is protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in five-year review reports. In addition, five-year review reports identify issues found during the review, if any, and recommendations to address them.

### Authority for Conducting the Five-Year Review

The Agency is preparing this five-year review pursuant to CERCLA §121 and the National Contingency Plan (NCP). CERCLA §121 states:

*If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less often than each five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented. In addition, if upon such review it is the judgment of the President that action is appropriate at such site in accordance with section [104] or [106], the President shall take or require such action. The President shall report to the Congress a list of facilities for which such review is required, the results of all such reviews, and any actions taken as a result of such reviews.*

The agency interpreted this requirement further in the NCP; 40 CFR §300.430(f)(4)(ii) states:

*If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action.*

### Who Conducted the Five-Year Review

The United States Environmental Protection Agency (U.S. EPA) Region 5 conducted a five-year review of the remedial actions implemented at the Velsicol Chemical Corporation site in St. Louis, Michigan, from February 2007 through September 2007. This report documents the results of the review. The Michigan Department of Environmental Quality (MDEQ) served as the support agency during the review.

## Other Review Characteristics

This is the third five-year review for the Velsicol Chemical site. The triggering action for this review is the date of the second five-year review, which, as shown in U.S. EPA's WasteLAN database, was completed on September 25, 2002.

This five-year review is considered a policy review because the past remedial action work at OU1 of the site, discussed later in this report, was conducted prior to the Superfund Amendments and Reauthorization Act of 1986 (SARA). That remedial action work left hazardous substances, pollutants, or contaminants on site above levels that allow for unlimited use and unrestricted exposure (UU/UE). Although U.S. EPA conducted post-SARA remedial action work at OU2 of the site to address contaminated sediments in the Pine River, the OU2 remedial action work has not resulted in any limitations on use or restrictions on exposure related to the river.<sup>1</sup> If any future remedial action work at the site leaves hazardous substances, pollutants or contaminants on site above levels that allow for unlimited use and unrestricted exposure, subsequent five-year reviews would be considered statutory reviews.

The MDEQ is currently conducting a remedial investigation/feasibility study (RI/FS) for OU1 of the site, which will lead to a ROD for OU1.

## **II. Site Chronology**

**Table 1: Chronology of Site Events**

<b>Event</b>	<b>Date</b>
Initial discovery of problem or contamination	1978
Pre-NPL responses	1978-1983
NPL listing	September 8, 1983
Enforcement documents (Consent Judgment)	December 27, 1982
Remedial design start (main plant site)	December 27, 1982
Remedial design complete (main plant site)	January 27, 1983
Remedial action start (main plant site)	January 27, 1983
Construction dates (start – finish; main plant site)	January 1983 – November 1984
U.S. EPA removal assessment	February 1990 – June 1990
Construction completion date (date of preliminary close-out report)	September 25, 1992

<sup>1</sup> While the remedial action at OU2 did not result in any limitations on use or restrictions on exposure, the no-consumption fish advisory that has been in effect since 1977 will remain in effect until it is demonstrated that contaminant levels in fish have decreased to acceptable levels.

**Table 1: Chronology of Site Events (continued)**

Event	Date
U.S. EPA removal assessment	May 1992 – September 1992
Final Close-Out Report	September 25, 1992
OU2 streamlined RI/FS start	February 14, 1997
First Five-Year Review	August 27, 1997
OU2 streamlined RI/FS complete	February 15, 1999
OU2 removal action start	August 3, 1998
OU2 removal action complete	October 20, 1999
Record of Decision for OU2	February 12, 1999
OU2 remedial design start	March 24, 1999
Superfund State Contract signature	April 20, 1999 (with subsequent amendments)
OU2 remedial action start	May 21, 1999
OU2 construction dates (start, finish)	October 1999 – November 2006
MDEQ OU1 RI/FS start	September 2001
Second Five-Year Review	September 25, 2002
OU2 remedial design complete	September 29, 2003
MDEQ RI Report released	November 2006

### III. Background

#### Physical Characteristics

The Velsicol Chemical site is located in Gratiot County, St. Louis, Michigan, and consists of two operable units (see Figure 1). As described in MDEQ's RI Report for OU1 (November 2006), OU1 consists of three sub-areas: (1) the 52-acre main plant site located at 500 Bankson Street, which is the location of the former chemical manufacturing facility; (2) the "adjacent or nearby properties" (including the residential neighborhood located south and east of the main plant site, as well as two nearby parcels formerly owned and operated by Velsicol); and (3) the "former burn area" located north of the main plant site and across the Pine River within the boundaries of the Hidden Oaks Golf Course. Operable Unit 2 consists of contamination in the sediments and fish in the lower and middle basins of the St. Louis Impoundment of the Pine River, which runs along the western and northern edge of the main plant site. The St. Louis Impoundment is created by the St. Louis dam, located east of the site.

Although MDEQ included the former burn area as part of OU1 for purposes of the RI Report, that area is part of the Gratiot County Golf Course site, which is across the Pine River from the main plant site and a separate site in U.S. EPA's CERCLIS database. The Golf Course site was proposed for the National Priorities List (NPL) on December 30, 1982, and was deleted from the

NPL on September 8, 1983, after cleanup actions were conducted at the site. U.S. EPA views the requirement that it conduct a five-year review for the Velsicol Chemical site as applying to the areas of the Velsicol site that are not part of other separately-identified sites in U.S. EPA's WasteLAN database. Therefore, for purposes of this five-year review, the term OU1 means the main plant site and the adjacent or nearby properties, and OU2 means the lower and middle basins of the St. Louis Impoundment of the Pine River. Also, for purposes of this five-year review, "Velsicol Chemical site" or "site" means OU1 (as described in this paragraph) and OU2.

The main plant site is bordered on the west and the north by the Pine River, and on the east and south by residential neighborhoods. Approximately 3,800 people live within one mile of the site, and approximately 10,000 people live within three miles of the site.

### Land and Resource Use

The main plant site portion of OU1 was once a chemical processing plant and refinery and is currently fenced on all sides to restrict access. The main plant site is located in the middle of the City of St. Louis. The current land use immediately adjacent to the main plant site is residential. Land use across the Pine River (around the area of the former burn area) is a mixture of recreational (golf course) and residential land use. Some agricultural land use occurs along the Pine River downstream of the St. Louis dam a few miles out of town. The land uses described above for the areas surrounding the main plant site are expected to continue in the future. The ROD for OU1, when issued, will address projected land uses for the main plant site itself.

The City of St. Louis draws its drinking water from six municipal water supply wells located within one mile of the site, and two of the wells (#1 and #4) are located within ¼ mile of the easternmost edge of the main plant site.

Operable Unit 2 of the site is currently used for recreational purposes and such use is anticipated to continue in the future.<sup>2</sup> The river is also used to generate electricity; the Pine River Impoundment provides hydraulic head for power generation at a hydroelectric plant located near the St. Louis dam.

### History of Contamination

The 52-acre main plant site was used for industrial operations since the mid-1800s, including a lumber mill, oil refinery, salt plant, and chemical plant. Michigan Chemical Corporation (MCC) purchased the facility in 1935 and operated a chemical manufacturing business until 1977, when MCC merged with Velsicol Chemical Corporation (Velsicol). From 1936 through 1977, the plant manufactured a variety of organic and inorganic chemicals including polybrominated biphenyls (PBB), hexabromobenzene (HBB), dichlorodiphenyltrichloroethane (DDT), and

---

<sup>2</sup> The ROD for OU2 (the only ROD so far for the site) did not include information regarding current and projected land and ground water uses for the site; the ROD stated that such information "is not included...because it does not apply," likely because the OU2 remedy dealt solely with remediation of river sediments and not with land or groundwater issues.

tris(2,3-dibromopropyl)phosphate (TRIS). The plant was closed in 1977 and decommissioning activities were initiated in 1978. The plant site represented a threat to public health, welfare, and the environment because of widespread contamination caused by poor waste management practices and direct discharges of process wastes to the adjacent Pine River. Prior to the site's listing on the NPL, a number of pre-NPL responses were conducted from 1978 through 1983, including site characterization investigations, site inspections, and a preliminary assessment. The site was proposed for inclusion on the NPL on December 30, 1982, and appeared on the final NPL on September 8, 1983.

The site has been the subject of a number of investigations over the years conducted by the Michigan Department of Natural Resources (MDNR), Velsicol, U.S. EPA and MDEQ, formerly the MDNR. Some of those investigations will be discussed later in this report.

### Initial Response

Initial remedial measures for the site began in October 1978 with plant closure and decommissioning activities, cessation of process discharges to the Pine River, and demolition of buildings and structures on the main plant site. Initial site characterization activities began in 1978 and continued through 1980. Those early studies revealed contamination in site soils, groundwater, river sediments, and fish. Pine River surface water did not contain measurable levels of contaminants associated with the site.

Based on those early studies, U.S. EPA and the State of Michigan negotiated and entered a CJ with Velsicol in 1982 for a remedy directed at stopping the migration of PBB, HBB, DDT and other site contaminants from the main plant site into the environment. Under the CJ, Velsicol agreed to contain in place the 52-acre main plant site and to pay \$13.5 million to Michigan and \$500,000 to the Superfund. Under the CJ, Velsicol also agreed to excavate contaminated soil from the former burn area and to place those materials on the main plant site, inside the containment system. The parties to the CJ concluded at the time that the most appropriate alternative for the Pine River sediments was to leave them in place. The CJ released Velsicol from liability for cleanup of the sediments that were contaminated at the time of entry of the CJ or sediments that became contaminated from migration or discharge from the main plant site prior to completion of the containment system.

The 1982 CJ required Velsicol to construct a containment system for the main plant site comprised of a 2-foot thick, low permeability slurry wall around the facility and a 3-foot thick, low permeability clay cap on top. The CJ also required Velsicol to maintain groundwater levels within the containment system and to conduct long-term operation and maintenance (O&M) activities at the site. Velsicol began implementation of the CJ remedy in January 1983 and completed construction of the containment system in 1984. This work included excavating approximately 68,000 cubic yards of contaminated material from the former burn area (Golf Course site) and placing it on the main plant site under the clay cap.

The main plant site is now covered with shallow-rooted grass and is surrounded by a chain-link fence to restrict access.

As mentioned previously, the CJ did not require Velsicol to remove the contaminated sediments from the Pine River. A 1988 Preliminary Health Assessment prepared by the Michigan Department of Public Health (MDPH) and the Agency for Toxic Substances and Disease Registry (ATSDR) concluded that the river posed a potential public health concern because of possible human exposure to contaminants via ingestion of fish and direct contact with river sediments. The concern regarding potential fish consumption was reiterated in 1993 in an MDPH/ATSDR Site Review and Update. The State of Michigan addressed the concern regarding contamination of fish in the river by issuing health advisories. A no-consumption advisory for all species of fish was initially published in the Michigan fishing guides in 1977, and the no-consumption advisory, which affects 33 miles of the Pine River, is still in effect.

Velsicol operated and maintained the site in accordance with the approved operation and maintenance plan, and water levels inside the containment system remained below the level set by the 1982 CJ until February 1993.<sup>3</sup> From 1993 to mid-1998, Velsicol had to pump water from the containment system and dispose of the water off-site in order to maintain the water levels within the containment system below the level established by the CJ.

In late 1994, the State of Michigan collected fish samples and noted that the average concentration of total DDT in skin-off filet carp samples (23.3 parts per million (ppm)) had more than doubled since 1989 (10.5 ppm). The State collected fish samples again in 1995 (16.1 ppm). The DDT concentrations in fish tissue coupled with the rising water levels inside the containment system caused concern that the containment system may have failed, increasing the loading of DDT into the Pine River.

## **OU1**

Following the events noted above, U.S. EPA and MDEQ asked Velsicol to conduct a comprehensive assessment of the containment system to ensure that it was not a source of DDT into the Pine River, and Velsicol agreed. At about the same time, U.S. EPA and MDEQ reassessed the sediment contamination in the Pine River and decided to reconsider the no-action decision made in the 1982 CJ (see OU2 discussion below.)

In 1996, Velsicol completed its assessment of the containment system. Velsicol's assessment of the clay cap included collection and analysis of samples from the upper portion of the cap for permeability, grain size and Atterberg limits. Velsicol's assessment of the slurry wall consisted of installation of inclinometers inside and outside the slurry wall at seven locations, installation of settlement plates at seven locations inside the slurry wall, collection of samples at nine locations for permeability analysis, installation of upper zone piezometers on the inside and outside of the slurry wall at five locations, water level measurements and free product screening from all monitoring wells and piezometers, and a dye tracer study at the five locations where piezometers were installed. Velsicol documented the results of the containment system

---

<sup>3</sup> Water levels inside the containment system initially rose above the level established in the CJ in February 1992, but the exceedance was temporary, with water levels dropping below the established level by June 1992.

assessment in a report entitled *Final Containment System Assessment Report, Former Michigan Chemical Plant Site, St. Louis, Michigan* (October 1, 1997).

U.S. EPA and MDEQ agreed with Velsicol's containment system assessment document, which stated that the clay cap was leaking, most likely due to the absence of a frost protection layer on top of the cap. The document also concluded (based solely on water elevation measurements) that 94% of the water that was infiltrating the cap was migrating through the underlying clay till unit rather than moving laterally through the slurry wall. No obvious problems were documented with the slurry wall. Velsicol concluded in its report that the containment system was working as designed. In December 1997, Velsicol submitted a work plan entitled *Work Plan Post-Closure Cap Maintenance, Former Michigan Chemical Plant Site, St. Louis, Michigan*, in which Velsicol proposed to conduct maintenance of the clay cap during the summer of 1998 by recompacting areas of the cap. Velsicol decided to delay this work until U.S. EPA and MDEQ completed the sediment removal project (discussed below). Both U.S. EPA and MDEQ agreed to the delay. However, in December 1999 (while the sediment removal project was underway), Fruit of the Loom (FTL), and its subsidiary, NWI Land Management Inc., (NWI) filed for bankruptcy under Chapter 11. NWI Land Management Inc., became owner of the site in 1986 through a complicated management buyout of Velsicol Chemical Corporation. Velsicol had been a subsidiary of FTL, but in 1986 became a separate company, and title to the Velsicol St. Louis site was transferred to NWI. Velsicol Corporation continued to manage the site for NWI and FTL. When FTL filed for bankruptcy in 1999, it ceased payments to Velsicol for work at the site; instead FTL's environmental firm, CEC, took over managing the site. Fruit of the Loom was not willing to repair the cap until the sediment remediation was completed. In 2002, U.S. EPA and Michigan settled their bankruptcy claims against FTL and NWI by accepting funding to a trust account from certain assets of the bankrupt estate and from Velsicol. The cap repair work was never done because at this point, Michigan and U.S. EPA had initiated an investigation of the containment system at the main plant site. As a result of the bankruptcy settlement, FTL, NWI and Velsicol were released from CERCLA liability for the site and consequently there are no potentially responsible parties for the site.

## OU2

At about the same time as the containment system assessment for the main plant site, U.S. EPA and MDEQ began a reassessment of the contamination in the Pine River. During the summer of 1996, sediment cores were collected from 23 locations in the St. Louis Impoundment and analyzed for PBB, HBB and DDT. Surficial sediment samples were also collected from depositional areas in the lower Pine River (below the St. Louis dam). During the summer of 1997, U.S. EPA and MDEQ collected another round of sediment cores from 28 locations and analyzed them for DDT and total organic carbon. MDEQ also collected fish for analysis.

In June 1998, U.S. EPA signed an Action Memorandum for a time-critical removal action to remove the most highly-contaminated sediments from the Pine River (OU2). The removal action included excavating contaminated sediments containing 3,000 ppm total DDT or greater from an area now known as the hot spot cell. U.S. EPA carried out the removal action by installing sheet piling around the most highly contaminated sediments to create the cell, dewatering the cell,

treating the sediments with a stabilizing/drying agent, excavating the DDT-contaminated sediments, and disposing them off-site. The removal action also included building necessary infrastructure such as roads, a staging pad, and a water treatment plant. U.S. EPA's removal action at the hot spot cell began in August 1998 and was completed in October 1999, and removed approximately 30,000 cubic yards of sediments from the river. In February 1999, following completion of a streamlined RI/FS for the Pine River, U.S. EPA signed a ROD for OU2.<sup>4</sup> The selected remedy included hydraulic modification of the Pine River, excavation of sediments containing greater than 5 ppm total DDT, dewatering and water treatment, and disposal of the contaminated sediments in either a RCRA Subtitle D or C landfill. Remedial action construction activities began in October 1999 and were completed in November 2006.

During the sediment cleanup work, while conducting excavation activities in the dewatered Pine River adjacent to the northern edge of the main plant site, U.S. EPA encountered significant quantities of non-aqueous phase liquid (NAPL), both pooled on top of the glacial till and in sand seams within the till. U.S. EPA also observed seeps from the containment system. In 2002, U.S. EPA collected from the hot spot cell 3,000 gallons of NAPL consisting of greater than 70% DDT.

Based on concerns regarding failure of the containment system for OU1, MDEQ initiated RI planning activities in April 2000 and began RI fieldwork in September 2001 to assess the containment system and the nature and extent of contamination at OU1.

## **OU1 Revisited**

As noted above, MDEQ initiated RI planning activities for OU1 in April 2000. The MDEQ conducted its RI work in a multi-phased approach, with the results of each phase of the investigation helping direct the investigations in subsequent phases. Remedial investigation field activities began in September 2001 and continued through October 2005. The initial phase of the investigation focused on evaluating the integrity of the slurry wall, with subsequent phases expanding the investigation to evaluate the nature and extent of the contamination across all media at and surrounding the main plant site, including soil, groundwater, soil gas and NAPL areas.

The MDEQ finalized and issued the RI Report for OU1 in November 2006. The RI Report characterized the nature and extent of contamination at OU1 and found that significant contamination from volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, specialty chemicals, and inorganics exists in soil and groundwater at the main plant site, and that soil in three areas of the residential neighborhood adjacent to the main plant site contains concentrations of PBB above MDEQ's Part 201 direct contact criteria. The MDEQ has installed orange construction fencing around the three areas to prevent access to

---

<sup>4</sup> This "Initial Response" section of the five-year review report is generally intended to describe pre-ROD cleanup activities at the site, while post-ROD activities are discussed in later sections. The ROD for OU2 is discussed to some extent in this section, however, because findings during implementation of the remedy at OU2 relate directly to subsequent, additional pre-ROD activities for the main plant site, OU1.

those areas. In addition to characterizing the nature and extent of contamination and the resulting risks to human health and the environment, the RI Report concluded that neither the clay cap nor the slurry wall meet the original design specifications, and neither are functioning as designed. Additionally, the report concluded that the slurry wall is not preventing the migration of contaminated groundwater from the main plant site and that the containment system is therefore not protective of human health and the environment. The MDEQ is currently preparing an FS Report that will evaluate a range of potential remedial alternatives for OU1.

In conjunction with the State-lead RI fieldwork, U.S. EPA also conducted OU1 site investigation activities to supplement and support MDEQ's work. U.S. EPA's work included a Source Migration Investigation (SMI) to investigate the presence and extent of NAPL contamination at the main plant site. The primary fieldwork for the SMI was conducted from September 2004 through July 2005, and the SMI Report was finalized in November 2005. The SMI was intended to support the RI by determining the distribution of dense non-aqueous phase liquid (DNAPL) at the main plant site, the extent of DNAPL mobility in the subsurface, and the extent of groundwater contamination resulting from DNAPL migration. As part of the SMI, U.S. EPA sampled the City of St. Louis water supply wells and some private residential wells. No contamination was detected in the residential wells. The chemical para-chlorobenzene sulfonic acid (pCBSA), a byproduct of the DDT manufacturing process, was detected in some of the city wells, including wells #1 and #4 (the closest to the site). pCBSA is highly soluble in groundwater and is resistant to natural degradation, making it very mobile in groundwater and a useful indicator of contaminant movement. The MDEQ subsequently established a drinking water standard for pCBSA (7,300 parts per billion (ppb)), and U.S. EPA has been routinely monitoring the city wells and certain site monitoring wells for pCBSA and other site-related contaminants. The highest levels of pCBSA have been found in site monitoring well MW30I, a well screened in the Intermediate aquifer and located east of the main plant site and south of the Pine River, along Mill Street. City wells #1 and #4 (which are screened in the Lower Unit aquifer) are located in the same general vicinity, approximately 300 feet from MW30I.

In February 2007, U.S. EPA completed installation of eight deep sentry monitoring wells screened in the same portion of the Lower Unit aquifer as the city wells to collect additional information about the geology and hydrogeology of the Lower Unit and to provide advance warning of potential impacts to the city wells from site-related contaminants.

Para-chlorobenzene sulfonic acid has been detected in all six city wells and is routinely detected in five of the wells. (The sixth well has had only sporadic detections and, based on information gained during installation of the deep sentry monitoring wells, is believed to be upgradient of the Velsicol site.) The levels of pCBSA detected in the city wells to date are well below the state drinking water standard. The highest concentrations detected in the city wells (through June 2007) are in wells #1 (170 ppb) and #4 (460 ppb). The highest levels detected in the other three city wells that routinely have detections are 32 ppb, 4.9 ppb, and 2.9 ppb. Concentrations of pCBSA as high as 380,000 ppb (480,000 ppb in a duplicate sample) have been detected in MW30I.

## Basis for Taking Action

### **Contaminants**

As summarized in the previous five-year review report, hazardous substances that have been released at the site in soil, sediment and groundwater include DDT, PBB, HBB and chlorobenzene. The remedy implemented at OU1 under the 1982 CJ was directed at stopping the migration of these and other site contaminants from the main plant site into the environment.

The ROD for OU2 selected a remedy that called for removal of the DDT-contaminated sediments in the Pine River. While the RI/FS for OU2 identified PBB, total DDT, and HBB as chemicals of concern, total DDT was the basis for the human health and ecological risk assessments because it was found at the highest concentrations in fish tissue and sediments. The concentrations of total DDT in the sediments presented unacceptable risk to human health and the environment from fish consumption (by both humans and fish-eating birds). The ROD recognized that meeting the risk-based cleanup level for total DDT would require the removal of all the sediments within OU2, and that the other contaminants of concern would, therefore, also be removed.

Since the previous five-year review, MDEQ finalized the RI Report for OU1 in late 2006. The RI found that significant contamination from VOCs, SVOCs, pesticides, specialty chemicals, and inorganics exists in soil and groundwater at the main plant site,<sup>5</sup> and some areas in the residential neighborhood adjacent to the main plant site were found to have soil PBB concentrations exceeding MDEQ's part 201 direct contact criteria. These findings will be addressed in the upcoming FS and ROD for OU1.

## **IV. Remedial Actions**

### Remedy Selection

#### **OU1**

There is no ROD for OU1. The remedy previously implemented at OU1 was set forth in the 1982 CJ. The 1982 CJ stated that the purpose of the CJ is to protect against alleged endangerment to the public health and the environment from chemical contamination resulting from operations at Velsicol's St. Louis facilities. The 1982 CJ also stated that the most appropriate environmental alternative for the Pine River/St. Louis Reservoir sediments is to leave the existing contaminated sediments undisturbed.

---

<sup>5</sup> This "Basis for Taking Action" section of the five-year review report is intended to summarize the basis for the selected remedy (or remedies) being reviewed, in this case the 1982 CJ remedy for OU1 and the 1999 ROD for OU2. Because the FS is still underway and a ROD has not yet been signed for OU1, this five-year review report does not provide detailed information about specific chemicals of concern in each media at OU1. That information will be discussed in future five-year reviews, if such reviews are required for OU1.

As mentioned previously, MDEQ is conducting an RI/FS for OU1 as a result of indications that the containment system had failed. MDEQ finalized the RI Report in November 2006 and currently is preparing an FS Report. The RI/FS will lead to a ROD for OU1.

## **OU2**

The selected remedy for OU2 was set forth in a ROD signed by U.S. EPA on February 12, 1999. The remedy included hydraulic modification of the Pine River, excavation of sediments containing greater than 5 ppm total DDT, dewatering and water treatment, and disposal of the contaminated sediments in either a RCRA Subtitle D or C landfill. The ROD stated that the remedial action objectives were as follows: reduce DDT concentrations in fish and sediments in the St. Louis Impoundment to levels that would not present an unacceptable human health or ecological risk and would allow eventual elimination of existing fish consumption advisories; prevent direct human contact with contaminated sediments; prevent significant down river migration of contaminated sediments; achieve compliance consistent with federal and state applicable or relevant and appropriate requirements for the site; and comply with risk-based objectives defined by the risk assessment.

The 5 ppm sediment cleanup goal for total DDT allows for and was based on UU/UE. U.S. EPA utilized a volume break point analysis and risk reduction analysis to arrive at a protective and cost-effective cleanup goal, and determined that removing sediment with DDT concentrations at or above 5 ppm would reduce levels of DDT in fish tissue by over 95% from pre-ROD levels, whereas a cleanup goal of 1 ppm DDT would double the volume of sediment to be removed while providing only a slightly greater reduction in fish tissue levels. The ROD also anticipated that utilizing a sediment cleanup goal of 5 ppm would, in practice, result in a post-cleanup sediment concentration of 1.5 ppm total DDT.

The ROD anticipated that all sediments at and above 5 ppm total DDT would be removed from the river, and that there would be no site-related use restrictions on the river (i.e., UU/UE) after completion of the remedy. The ROD indicated that restrictions on fish consumption, however, would remain in place until contaminant levels in fish have been demonstrated to have decreased to acceptable levels, and that five-year reviews for OU2 would be required until those acceptable levels had been achieved.

### **Remedy Implementation**

## **OU1**

The remedy set forth in the 1982 CJ generally consisted of isolating the main plant site from surrounding groundwater with a 2-foot thick, low-permeability slurry wall around the perimeter of the main plant site, installing a 3-foot thick, low-permeability clay cap over the area, and maintaining groundwater levels within the containment system to a maximum allowable elevation. The CJ also required Velsicol to implement other measures including monitoring well installation, ground water elevation monitoring, periodic testing of the slurry wall for three years after its installation, and performance of long-term operation and maintenance.

Under the CJ, Velsicol submitted design plans and specifications for the containment system to U.S. EPA and the State for review and approval. Velsicol began construction of the remedy in January 1983 and completed the construction work in November 1984. The slurry wall was reportedly keyed a minimum of 30 inches into the underlying clay till unit. Following completion of the slurry wall construction, Velsicol completed the required three years of periodic testing which indicated the slurry wall was constructed as designed.

As discussed previously, subsequent observations, investigations and reports (most recently MDEQ's November 2006 RI Report) have concluded that the containment system does not meet the original design specifications, is not functioning as designed, and is not protective of human health and the environment.

## **OU2**

Following the February 1999 ROD for OU2, U.S. EPA started remedial design work in March 1999 and began remedial action work in May 1999, with actual on-site construction work beginning in October 1999 as the time-critical removal action work at the hot spot cell was being completed. All remedial design work was completed by September 2003.

The remedial action work for OU2 was conducted in phases, with Phase I addressing the sediments in the southern half of the Pine River immediately adjacent to the former plant site, and Phase II addressing sediments in the river's northern portion and Mill Pond. Various remedial cells were constructed of sheetpiling during each phase (see Figure 2). Similar to the prior removal action work, the remedial action work for OU2 involved dewatering within the cells, treating the sediments with a stabilizing/drying agent, excavating the sediments and disposing them off-site. The remedial action work also included treating the water removed from the cells at the on-site treatment plant after first being pumped to an equalization basin.

Phase I work was conducted from 1999 to 2003, and Phase II work was conducted from 2003 through 2005. The infrastructure in the river, such as the haul road, equalization basin and steel sheetpiling, was removed during 2006, with remedial action construction activities completed in November 2006. The remedial action will be considered officially complete when U.S. EPA approves the final Remedial Action Report. The remedial action work at OU2 removed an estimated 640,000 cubic yards of DDT-contaminated sediments, and an estimated 222 tons of DDT, from the Pine River.

During the 2001 construction season U.S. EPA observed seepage from the riverbank adjacent to the main plant site into the Hot Spot Cell, and during both the 2001 and 2002 construction seasons U.S. EPA discovered that in some areas sand seams on top of and within the glacial till underlying the Pine River contained DNAPL. Two distinct types of DNAPL were identified: one containing primarily DDT and chlorobenzene ("hot spot cell DNAPL") and a second containing primarily brominated and other halogenated organic compounds, with very small amounts of DDT ("Area 3 DNAPL"). Figure 3 shows the various locations where NAPL was observed during the OU2 remedial action.

Following these discoveries, U.S. EPA decided to take an interim response action to prevent DNAPL and contaminated groundwater from seeping from the main plant site into the remediated areas of the Pine River. U.S. EPA installed NAPL collection trenches along the southern shoreline of the Pine River, and also pumped DNAPL directly from pooled areas on the exposed glacial till. In 2002 alone, U.S. EPA removed 3,275 gallons of DNAPL from the subsurface of the riverbed. To date, U.S. EPA has removed 4,355 gallons of DNAPL.

Most of the NAPL collection system was installed during the 2002 construction season, but an additional segment was installed during 2006 along the shoreline in the former equalization basin. The NAPL collection system consists of a series of main trench segments along the shoreline, with trench laterals extending toward the center of the river perpendicular to the shoreline. A manhole with a 3-foot sump was installed in the middle of each main trench segment to facilitate removal of DNAPL by pumping (see Figures 2 and 4). Construction details of the NAPL collection system are provided in the *2006 Cleanup Status Report* (CH2M HILL, 2006).

Typically, following dewatering, 10 to 13 feet of contaminated sediment were present in a remedial cell, underlain by 1 to 3 feet of sand. Very dense glacial till was present below the sand. Usually, after all the sediment and sand were removed, confirmation sampling of the underlying glacial till showed remaining total DDT concentrations were less than the cleanup level of 5 ppm.<sup>6</sup> In some instances, some minor scraping of the till surface was necessary to meet the total DDT cleanup standard. In other cases (especially in the Hot Spot Cell and Area 3), the glacial till was heavily contaminated by DNAPL, and complete excavation of DNAPL-affected till was infeasible because of concerns about the stability of the sheet pile wall and breaching the lower aquifer. In these areas, final confirmation samples typically were not collected, and the till was capped with 2 feet of imported clay (see Figure 4). Additionally, clean earthfill was used to backfill all sheet pile walls where sediment excavation had exposed the face of the wall. This clean earthfill was left in place when the sheetpiling was removed.

As mentioned previously, the ROD anticipated that all sediments at and above 5 ppm total DDT would be removed from the river. Even in the areas where NAPL-impacted till was discovered, all contaminated sediments were removed. The only area of OU2 where contaminated sediments were not removed is an area of the river known as "Area 2." Area 2 is located along the southern edge of the river from just west of the Mill Street Bridge to the dam at the southeastern portion of the Mill Pond (see Figure 5). Sample results showed that this area contained minimal concentrations of DDT contamination, and engineering design considerations determined that the area would be very difficult to work in. As a result, Area 2 was excluded from the cleanup. The average surficial DDT concentration in Area 2 is 13.8 ppm, and the average concentration for the

---

<sup>6</sup> Although the ROD for OU2 had not established cleanup criteria for the other contaminants of concern, confirmation samples were also analyzed for PBB and HBB. TRIS analysis was also initially conducted but was dropped after the 2000 construction season because TRIS was not detected in any of the 440 confirmation samples that year.

entire sediment column is 15.7 ppm total DDT. An estimated 26,000 cubic yards of sediments remain in Area 2.

Based on all of the confirmation sampling that was conducted in remediated cells, and considering that any NAPL-impacted areas of glacial till were capped with 2 feet of compacted clay, U.S. EPA estimates that total DDT surface weighted average concentration (SWAC) for all of OU2 (including the unremediated Area 2) is 1.38 ppm total DDT.<sup>7</sup> This is slightly less than the total DDT SWAC that the ROD estimated would result from a 5 ppm cleanup standard. As discussed previously, the ROD estimated that utilizing a 5 ppm cleanup standard would, in practice, result in a post-cleanup concentration of 1.5 ppm total DDT.

Based on successful implementation of the remedial action and the resulting total DDT SWAC for OU2, U.S. EPA anticipates that DDT concentrations in fish will decrease over time. However, until actual fish sampling data demonstrate that DDT levels in fish have decreased to safe levels, the current no-consumption fish advisory will remain in place. Additionally, operation and maintenance of the NAPL collection system needs to continue until a permanent remedy is implemented for OU1.

### Institutional Controls

As discussed below, the original remedy for OU1 was established in the 1982 CJ. There was no ROD, and there were no institutional controls<sup>8</sup> (ICs). Institutional controls will be evaluated during the ongoing remedy selection process and implemented, if needed, as part of the selected remedy for OU1. For OU2, the need for ICs is under review.

## **OU1**

As discussed previously, there is no ROD for OU1. The remedy previously implemented at OU1 was set forth in the 1982 CJ. ICs were not required by the CJ, even though the remedial action work conducted under the CJ left hazardous substances, pollutants, or contaminants on site above levels that allow for UU/UE. Until recently, the main plant site was zoned industrial. The City of St. Louis recently changed the zoning for the main plant site to residential, in hopes that such a change would result in more stringent cleanup standards for OU1 in the upcoming ROD. Additionally, since the neighborhood surrounding the main plant site is residential, the City does not want the main plant site to return to industrial use following cleanup.

Although there are no ICs in place for the main plant site, the fencing surrounding the site serves to meet IC objectives by restricting access. Additionally, a large granite marker (installed as part of the 1982 CJ remedy) is located inside the main gate and warns of the hazardous waste buried on-site. If OU1 were to remain as is, ICs would be required. However, U.S. EPA and MDEQ

---

<sup>7</sup> The final SWAC value, including documentation of the SWAC for each remedial cell, will be presented in the OU2 *Remedial Action Report* when that document is finalized.

<sup>8</sup> Institutional controls are non-engineered instruments, such as administrative and/or legal controls, that help minimize the potential for exposure to contamination and protect the integrity of the remedy. Compliance with ICs is required to assure long-term protectiveness for any areas which do not allow for UU/UE.

have concluded that the OU1 containment system does not meet the original design specifications, is not functioning as designed, and is not protective of human health and the environment. The MDEQ has completed and released an RI Report for OU1 and currently is preparing an FS Report to evaluate a range of potential remedial alternatives for the site. The RI/FS will lead to a ROD for OU1. Institutional controls will be evaluated during the remedy selection process and implemented, if needed, as part of the selected remedy for OU1.

## OU2

Institutional controls were not required in the OU2 ROD. As discussed earlier, a no-consumption advisory for all species of fish has been in effect since 1977. The no-consumption advisory, which affects 33 miles of the Pine River, is an institutional control. The successful attainment of the specified total DDT cleanup level in sediments should eventually result in safe DDT levels in fish and eventual elimination of the existing fish consumption advisories, but it will likely take some time to achieve that objective. Additionally, the need for ICs at OU2 (to protect the integrity of the constructed components of the OU2 remedy and to prevent disturbance of the sediments left in place in Area 2) is under review.

## SITE-WIDE

Table 2 summarizes those areas that do not support UU/UE and where ICs may be required.

**Table 2: Institutional Controls Summary Table**

<b>Media, Engineered Controls, &amp; Areas that Do Not Support UU/UE Based on Current Conditions.</b>	<b>IC Objective</b>	<b>Title of Institutional Control Instrument Implemented (note if planned)</b>
<b>Main Plant Site – OU1 – Constructed cap, area where waste is left in-place</b>	If ROD determines ICs necessary for new remedy, ICs will be established in accordance with ROD.	ICs under review as part of remedy selection process.
<b>Main Plant Site – OU1 – Other Constructed remedy components such as slurry wall, and monitoring wells</b>	If ROD determines ICs necessary for new remedy, ICs will be established in accordance with ROD.	ICs under review as part of remedy selection process.
<b>Main Plant Site Groundwater – OU1 – Current area that exceeds cleanup standards (cleanup standards to be determined in FS and ROD)</b>	If ROD determines ICs necessary for new remedy, ICs will be established in accordance with ROD.	ICs under review as part of remedy selection process.
<b>Off-Site Groundwater – OU1 – Current area that exceeds cleanup standards (cleanup standards to be determined in FS and ROD)</b>	If ROD determines ICs necessary for new remedy, ICs will be established in accordance with ROD.	ICs under review as part of remedy selection process.
<b>Constructed Remedy Components Along Shoreline and Riverbed of Pine River – OU2</b>	Prohibit destruction of or interference with constructed remedy components (except for O&M).	Need for ICs under review.
<b>Pine River – OU2</b>	(a) Prohibit Fish Consumption; (b) Prevent disturbance of sediments left in place in Area 2	(a) Informational IC in place – No-consumption fish advisory in effect; (b) Need for ICs under review.

As mentioned previously, a ROD will be completed to select a new remedy for OU1. As part of the remedy selection process, the need for ICs in the short term and/or long term will be considered. Also, as noted above, the need for ICs at OU2 is under review. Implementing and maintaining ICs may be required to assure protectiveness of the site-wide remedies.

#### System Operations/O&M

### **OU1**

As required by the 1982 CJ, Velsicol conducted O&M activities at the site following construction of the containment system. Following Fruit of the Loom's declaration of bankruptcy, U.S. EPA and MDEQ participated in negotiations with FTL, NWI and Velsicol as part of the bankruptcy proceedings and entered into a settlement agreement which provided FTL/NWI and Velsicol covenants not to sue for the St. Louis facility, in return for \$1.2 million in interim funding and almost \$4 million for long-term funding held in a Trust Account. The bankruptcy settlement created a successor to FTL and NWI whose purpose, among other things, is to implement the Settlement Agreement by receiving and distributing the assets to provide funding to the Custodial Trust for the Trust Accounts. The Custodial Trust has since been conducting certain O&M activities at the site (such as mowing and maintaining the site fence), but no maintenance of the containment system has been requested of or performed by the Trustee. The Trustee has been spending approximately \$40,000 per year on O&M at the site. In 2000, prior to the bankruptcy settlement, NWI estimated annual O&M costs for the site going forward would be \$172,000 per year. Velsicol has not been conducting activities at the site since FTL filed for bankruptcy in 1999 and neither Velsicol nor FTL/NWI has been responsible for O&M at the site since the 2002 bankruptcy settlement.

### **OU2**

The one constructed component of the OU2 remedial action that needs to be operated and maintained is the NAPL collection system, to ensure that site contaminants from OU1 do not recontaminate the Pine River sediments until a remedy is implemented at OU1. The DNAPL levels in the manholes will be routinely monitored, and U.S. EPA anticipates that DNAPL will need to be pumped from the collection system approximately once every two years. Dense non-aqueous phase liquid was last pumped from the system in 2006, and U.S. EPA anticipates pumping DNAPL from the system again during 2008.

The other constructed components of the OU2 remedial action are the compacted clay cap (over areas of DNAPL-impacted till and over the NAPL collection trenches) and the restored shoreline. These constructed components will be periodically inspected. Areas of the shoreline will be visually inspected for signs of erosion and repaired as needed.

In addition, long-term monitoring needs to be conducted to evaluate whether DDT concentrations in fish are decreasing. Concurrent monitoring of DDT concentrations in fish and sediment will support such an evaluation and allow trends to be identified. Such long-term post-

cleanup monitoring has not yet occurred.

U.S. EPA has drafted a *Long-Term Monitoring, Operations & Maintenance* plan and is discussing it with MDEQ. The draft plan includes other long-term monitoring components, including monitoring for contaminant migration from OU1 by installing seepage meters to measure groundwater to surface water flux. Anticipated costs of the monitoring and O&M measures will be included in the document when it is finalized.

## **V. Progress Since the Last Five-Year Review**

The previous five-year review report noted issues that impact protectiveness at the site, and the report provided recommendations and follow-up actions for those issues. All of the issues and recommended follow-up actions related to evidence that the OU1 containment system was leaking and was no longer protective of human health and the environment, and that sampling had indicated there were significant levels of contamination present at the site. The previous five-year review report also noted that all of the issues were in the process of being further investigated as part of MDEQ's RI/FS for OU1, that both agencies would evaluate the recommended alternatives proposed in the FS Report, and that a Proposed Plan and ROD would then be prepared by U.S. EPA.

The protectiveness statement(s) in the previous five-year review included the following language:

*The assessment of this five-year review found that the cap and slurry wall components of the site containment system are not functioning as intended and are no longer protective of human health and the environment* [from Five-Year Review Summary Form of previous five-year review report]; and

*The remedy at OU1 is not protective, but is expected to be protective once a new remedy is selected and implemented for OU1* [from text in Section X of previous five-year review report].

As discussed earlier in this report, MDEQ conducted a multi-phased RI for OU1. The MDEQ finalized the RI Report in November 2006 and currently is preparing the FS Report. The MDEQ's investigation confirmed that OU1 is not protective of human health and the environment. The RI and pending FS will support the selection of a protective remedy for OU1. In accordance with the Superfund remedy selection process, U.S. EPA will prepare a Proposed Plan and ROD for OU1 after the FS report is complete.

Table 3 below summarizes the issues, recommendations/follow-up actions, lead agency, and estimated milestone dates that were estimated in the previous five-year review report, as well as the actions taken since that time.

**Table 3: Actions Taken Since the Last Five-Year Review**

<b>Issues from Previous Review</b>	<b>Recommendations/ Follow-up Actions</b>	<b>Lead Agency</b>	<b>Estimated Milestone Date</b>	<b>Action Taken and Outcome</b>	<b>Date of Action</b>
Evidence cap is not functioning as intended	As of last five-year review, being investigated as part of MDEQ's RI/FS. To be addressed by ROD.	MDEQ (RI/FS); U.S. EPA (ROD)	December 2002 (RI/FS); August 2003 (ROD)	RI Report finalized; FS Report pending. (See text above for outcome.)	Nov.2006 (RI)
Evidence of breeches in slurry wall and is not functioning as intended	As of last five-year review, being investigated as part of MDEQ's RI/FS. To be addressed by ROD.	MDEQ (RI/FS); U.S. EPA (ROD)	December 2002 (RI/FS); August 2003 (ROD)	RI Report finalized; FS Report pending. (See text above for outcome.)	Nov.2006 (RI)
Identified DNAPL and groundwater seeps with high levels of contamination leaving site	As of last five-year review, being investigated as part of MDEQ's RI/FS. To be addressed by ROD.	MDEQ (RI/FS); U.S. EPA (ROD)	December 2002 (RI/FS); August 2003 (ROD)	RI Report finalized; FS Report pending. (See text above for outcome.)	Nov.2006 (RI)
Evidence of significant levels of contamination in samples collected from site soil, sediment and groundwater	As of last five-year review, being investigated as part of MDEQ's RI/FS. To be addressed by ROD.	MDEQ (RI/FS); U.S. EPA (ROD)	December 2002 (RI/FS); August 2003 (ROD)	RI Report finalized; FS Report pending. (See text above for outcome.)	Nov.2006 (RI)

## **VI. Five-Year Review Process**

### Administrative Components of the Five-Year Review Process

U.S. EPA initiated the five-year review for the Velsicol Chemical site on February 28, 2007, by sending a letter to MDEQ notifying the State that the five-year review process had begun. Copies of the letter were provided to the City of St. Louis and to the Pine River Superfund Citizen Task Force (including both the President and Technical Advisor of that group). The review team consisted of the U.S. EPA Remedial Project Manager, the U.S. EPA Community Involvement Coordinator, and the MDEQ project manager.

### Community Notification and Involvement

U.S. EPA notified the local community of the five-year review process by placing an advertisement in the local newspaper, the Morning Sun, on March 25, 2007 (see Attachment 1). Additionally, U.S. EPA notified members of the Pine River Superfund Citizen Task Force by providing them with a copy of the February 28, 2007, letter mentioned above, and by discussing the upcoming five-year review at the group's monthly Community Advisory Group (CAG) meeting on March 21, 2007. The CAG and its Technical Advisory Group (TAG) have been very actively involved with site activities since the mid-1990s. Both the U.S. EPA and MDEQ project managers attend monthly CAG and TAG meetings and provide updates to community members regarding site activities and issues. When the five-year review is finalized, the community will

be notified and the conclusions will be presented at a CAG meeting. The five-year review will also be placed in the site repository which is located at the St. Louis City Library in St. Louis, Michigan.

### Document Review

As part of the five-year review process, U.S. EPA reviewed the following relevant documents:

- *Record of Decision for Operable Unit 2 – Pine River, Velsicol Chemical Superfund Site* (U.S. EPA, February 12, 1999)
- *Year 2000 Cleanup Status Report – Velsicol Chemical Superfund Site* (prepared by CH2M HILL for U.S. EPA, February 2001)
- *Year 2001 Cleanup Status Memorandum – Velsicol Chemical Superfund Site* (prepared by CH2M HILL for U.S. EPA, May 2002)
- *2002 Cleanup Status Report - Phase I Remedial Action, Velsicol Chemical/Pine River Site, OU2* (prepared by CH2M HILL for U.S. EPA, August 2003)
- *NAPL Investigation Summary Report* (prepared by CH2M HILL for U.S. EPA, August 2003)
- *Final 2003 Cleanup Status Report – Phase 1 Remedial Action, Velsicol Chemical/Pine River Site, OU2* (prepared by CH2M HILL for U.S. EPA, March 2004)
- *Final 2004 Cleanup Status Report – Phase 2 Remedial Action, Velsicol Chemical/Pine River Site, OU2* (prepared by CH2M HILL for U.S. EPA, June 2005)
- *Final 2005 Cleanup Status Report – Phase 2 Remedial Action, Velsicol Chemical/Pine River Site, OU2* (prepared by CH2M HILL for U.S. EPA, October 2006)
- *Final 2006 Cleanup Status Report – Phase 2 Remedial Action, Velsicol Chemical/Pine River Site, OU2* (prepared by CH2M HILL for U.S. EPA, December 2006)
- *Remedial Investigation Report for Operable Unit One, Velsicol Chemical Corporation Superfund Site* (prepared by Weston for MDEQ, November 2006)

The ROD for OU2 discusses remedial action objectives, applicable or relevant and appropriate requirements, and cleanup levels for the OU2 remedial action. The yearly cleanup status reports document the OU2 cleanup progress, including quantitative information from post-cleanup confirmation sampling within the various remedial cells.

The RI Report for OU1 summarizes the findings of MDEQ's detailed investigation of the main plant site and the surrounding areas, including the nature and extent of contamination and an assessment of the containment system that was implemented as part of the 1982 CJ, as discussed earlier.

### Data Review

As part of the five-year review process, U.S. EPA reviewed the data, findings and conclusions in MDEQ's RI Report related to the OU1 main plant site. As discussed previously, the RI Report concluded that significant contamination from VOCs, SVOCs, pesticides, specialty chemicals,

and inorganics exists in soil and groundwater at the main plant site, and that soil in three areas of the residential neighborhood adjacent to the main plant site contains concentrations of PBB above MDEQ's Part 201 direct contact criteria. The RI Report also concluded that the containment system does not meet the original design specifications and is not functioning as designed, that the slurry wall is not preventing the migration of contaminated groundwater from the main plant site, and that the containment system is therefore not protective of human health and the environment.

For OU2, U.S. EPA reviewed the confirmation data collected from each remedial cell following removal of the DDT-contaminated sediments from the river. As discussed earlier, based on the data collected U.S. EPA estimates that the total DDT SWAC for all of OU2 is 1.38 ppm total DDT.

### Site Inspection

The site has been inspected numerous times during the past five years by U.S. EPA, MDEQ and those agencies' contractors, CH2M HILL and Weston, respectively. The purpose of the inspections and site visits was to conduct and/or oversee the OU1 RI fieldwork and the OU2 remedial action construction work. These inspections and visits directly related to assessing the protectiveness of the remedies for OU1 and OU2.

In addition to the numerous inspections and site visits conducted during the past five years, U.S. EPA also conducted a site inspection on September 7, 2007, specifically for purposes of this five-year review. The inspection was attended by Rebecca Frey, U.S. EPA Remedial Project Manager, and Theo VonWallmenich of CH2M HILL. The site inspection consisted of a walking, visual inspection of the 52-acre main plant site, including visual inspection of the site perimeter fence and all gates. Additionally, above-ground structures related to the NAPL collection system (installed during the OU2 remedial action) were observed, as were portions of the restored riverbanks along OU2. No significant findings were noted during the inspection that were not already addressed in the OU1 RI Report and/or the documents related to the OU2 remedial action. The site inspection checklist is included as Attachment 2.

### Interviews

Given the high level of community interest and involvement in this site, U.S. EPA decided to conduct community interviews as part of the five-year review process. Rebecca Frey, U.S. EPA Remedial Project Manager, and Robert Paulson, U.S. EPA Community Involvement Coordinator, conducted community interviews during the afternoon and evening of May 15, 2007, at the St. Louis City Library. U.S. EPA ran ads in the Morning Sun on April 29 and May 4, 2007, to announce the open interviews (see Attachment 3).

U.S. EPA planned to conduct interviews for two hours in the afternoon and two hours in the evening on May 15<sup>th</sup>, but due to overwhelming response by the community, ended up conducting interviews for approximately five and one-half hours. U.S. EPA interviewed dozens of people in person and received written input from dozens of others who could not wait at the library for an

interview spot. U.S. EPA also received written comments from several people who were unable to attend the interviews. In total, U.S. EPA heard from nearly 60 people, including city officials, the leadership of the CAG and TAG, regular attendees of CAG/TAG meetings, and many other community members. The completed interview forms and other written comments received from the public are attached as an Appendix to this report. (Names of individuals have been redacted to protect their privacy.)

In general, community members expressed concern about the quality of the groundwater and the city drinking water supply, and about the contaminants at the site and its impacts to human health and the economic health of the community. The people who participated in the interview process, either in person or by providing written input, are aware that the containment system around the main plant site is leaking, and the vast majority expressed their desire for a “complete cleanup” of the main plant site (OU1), meaning the total removal of all contaminated waste materials from the site. Those who commented on the OU2 sediment cleanup project generally expressed favorable opinions about the cleanup and its accomplishments. People also expressed concern that the river not become recontaminated from the leaking main plant site, as well as their expectation/desire that some day they will be able to eat fish caught from the river.

## **VII. Technical Assessment**

### Question A: Is the remedy functioning as intended by the decision documents?

**OU1:** No. The cap and slurry wall components of the containment system around the main plant site are not functioning as intended by the 1982 CJ and are no longer protective of human health and the environment. The answer to this question has not changed since the previous five-year review report.

**OU2:** Yes. However, the cleanup has not yet achieved the remedial action objective of reducing DDT concentrations in fish to a safe level. The ROD for OU2 noted that it would take some time to achieve this objective after completion of the remedial action. Physical construction activities for the OU2 sediment cleanup project are complete, and the cleanup achieved the 5 ppm total DDT cleanup level specified in the ROD. The ROD estimated that utilizing a 5 ppm cleanup standard would, in practice, result in a post-cleanup concentration of 1.5 ppm total DDT, and confirmation sampling results indicate that the SWAC for all of OU2 is 1.38 ppm total DDT. Additionally, the cleanup has achieved four of the five remedial action objectives set forth in the ROD (see discussion of remedial action objectives on page 23 of this five-year review report). As noted above, the one objective not yet achieved is to “reduce DDT concentrations in fish...to levels that would not present an unacceptable human health or ecological risk and would allow for eventual elimination of existing fish consumption advisories.” The post-cleanup total DDT level that was achieved for the Pine River sediments should eventually result in safe DDT levels in fish, but it will likely take some time to achieve that objective. Long-term fish tissue monitoring, with concurrent monitoring of DDT concentrations in sediment, needs to be conducted to monitor progress and trends in DDT fish tissue levels, and such post-cleanup monitoring has not yet occurred. Additionally, operation and maintenance of the NAPL collection system must continue until a remedy is implemented for OU1, to ensure that site

contaminants from OU1 do not recontaminate the Pine River sediments.

Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of remedy selection still valid?

**OU1:** No. The prior remedy for OU1 was set forth in the 1982 CJ, which stated that the purpose of the agreement was to protect against alleged endangerment to public health and the environment from chemical contamination resulting from operations at Velsicol's St. Louis facilities. Since that time, a number of discoveries have been made that indicate that the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used to select the 1982 CJ remedy are no longer valid. As discussed earlier in this report, such discoveries include the following: (1) data collected by MDEQ showed that DDT concentrations in fish had increased since implementation of the CJ remedy; (2) NAPL seeps, two types of NAPL, and NAPL-impacted sand seams in the glacial till underlying the Pine River were discovered during the Pine River sediment remediation project; (3) U.S. EPA detected pCBA in the city's drinking water supply wells and other site monitoring wells; and (4) MDEQ found some areas in the residential neighborhood adjacent to the main plant site that exceed MDEQ's Part 201 direct contact criteria for PBB. None of this information was known at the time of the 1982 CJ remedy. MDEQ's RI Report subsequently concluded (among other things) that the OU1 containment system had failed. MDEQ will be addressing exposure assumptions, toxicity data, cleanup levels, and remedial action objectives in the FS for OU1 to address the findings in the RI regarding the nature and extent of contamination at OU1 and the failure of the containment system at the main plant site.

**OU2:** Yes. The exposure assumptions, toxicity data, risk-based cleanup levels, and remedial action objectives used at the time of the OU2 ROD are still valid. During implementation of the remedy, U.S. EPA discovered seepage from the riverbank adjacent to the main plant site into the Pine River, and discovered sand seams on top of and within the glacial till underlying the river that contained DNAPL. These site conditions were not known at the time of the OU2 ROD, but once discovered, did not call into question the selected remedy or the cleanup objectives specified in the ROD. Additionally, U.S. EPA promptly took steps to address these newly-discovered site conditions by installing NAPL collection trenches along the shoreline to prevent DNAPL and contaminated groundwater from seeping from the plant site into the remediated areas of the river.

Question C: Has any other information come to light that could call into question the protectiveness of the remedy?<sup>9</sup>

**OU1:** Yes. The City of St. Louis recently passed a zoning ordinance, changing the zoning for

---

<sup>9</sup> In accordance with U.S. EPA's *Comprehensive Five-Year Review Guidance* (June 2001), it is expected that most considerations related to the protectiveness of the remedy will be covered by Questions A and B. This question is intended to allow consideration of other information or other factors about the remedy or the site, such as land use changes being considered by local officials, ecological risks that have not been adequately characterized, or the realization that flood plain redesignations may be necessary. For this five-year review, information regarding failure of the OU1 containment system is covered in the answer to Question A, and is not re-addressed in Question C.

the main plant site from industrial to residential, in hopes that such a change would result in more stringent cleanup standards for OU1 in the upcoming ROD. Additionally, since the neighborhood surrounding the main plant site is residential, the City does not want the main plant site to return to industrial use following cleanup. Certainly, the main plant site is not currently suitable for residential use.

**OU2:** No. Besides the considerations already covered by Questions A and B and discussed above, no other information has come to light that could call into question the protectiveness of the remedy.

## **Technical Assessment Summary**

According to information documented in the previous five-year review report, new data collected since that time and included in MDEQ's RI Report for OU1, and data and observations from implementation of the OU2 remedial action, the technical assessment for each OU is summarized below.

**OU1:** The previous remedy is not functioning as intended by the 1982 CJ and is not protective of human health and the environment. OU1 is the subject of an ongoing RI/FS that will lead to the selection of a protective remedy for OU1. MDEQ will be addressing exposure assumptions, toxicity data, cleanup levels, and remedial action objectives in the FS Report. The City of St. Louis recently changed the zoning for the main plant site from industrial to residential (in hopes that such a change would result in more stringent cleanup standards for OU1 in the upcoming ROD, and to prevent industrial reuse of the site following cleanup), but the main plant site is not currently suitable for residential use.

**OU2:** DDT levels in fish have not yet been demonstrated to have decreased to safe levels, but based on the post-cleanup confirmation sediment samples, the remedy for OU2 is functioning as intended by the ROD. It will take some time for DDT levels in fish to decrease, and long-term fish tissue monitoring, with concurrent monitoring of DDT levels in sediment, needs to be conducted to monitor progress towards achieving the remedial action objective of reducing DDT concentrations in fish to safe levels; operation and maintenance of the NAPL collection system also must continue until a remedy is implemented for OU1, to ensure that site contaminants from OU1 do not recontaminate the Pine River sediments. The exposure assumptions, toxicity data, risk-based cleanup levels, and remedial action objectives used at the time of the ROD are still valid. No other information has come to light that could call into question the protectiveness of the remedy at OU2.

## VIII. Issues

**Table 4: Issues**

Issues	Affects Current Protectiveness (Y/N)	Affects Future Protectiveness (Y/N)
OU1 containment system is not functioning as designed and is not preventing migration of contaminated groundwater from main plant site	Y	Y
pCBSA has been detected in city water supply wells at levels below drinking water standards, demonstrating that a contaminant migration pathway from main plant site exists	N	Y
Some areas in the residential neighborhood adjacent to main plant site have soil concentrations of PBB exceeding MDEQ Part 201 direct contact criteria	Y	Y
The NAPL collection system must be operated and maintained until protective remedy implemented for OU1 to ensure that site contaminants from OU1 do not recontaminate OU2	N	Y
DDT levels in fish have not yet been demonstrated to have decreased to safe levels, so no-consumption fish advisory remains in effect	Y	Y
Long-term monitoring of DDT levels in fish and sediment has not yet begun following completion of the OU2 remedial action	N	N
Implementing and maintaining ICs may be required in the short term and/or long term to assure protectiveness of the remedy site-wide	N	Y

## IX. Recommendations and Follow-up Actions

**Table 5: Recommendations and Follow-up Actions** (cont'd on next page)

Issue	Recommendations and Follow-up Actions	Lead Agency	Support Agency	Milestone Date	Affects Protectiveness (Y/N)	
					Current	Future
OU1 containment system is not functioning as designed & is not preventing migration of contaminated groundwater from main plant site	Complete the FS for OU1	MDEQ	U.S. EPA	June 2008	Y	Y
	Issue ROD for OU1	U.S. EPA	MDEQ	Dec. 2008		
	Implement remedy for OU1 to address failed containment system	U.S. EPA	MDEQ	2009		
pCBSA has been detected in city water supply wells at levels below drinking water standards, demonstrating that a contaminant migration pathway from main plant site exists	Continue monitoring city wells and sentry wells for pCBSA and other site-related contaminants	U.S. EPA	MDEQ	Ongoing	N	Y
	Complete the FS for OU1	MDEQ	U.S. EPA	June 2008		
	Issue ROD for OU1	U.S. EPA	MDEQ	Dec. 2008		
	Implement remedy for OU1 to address off-site migration of contaminated groundwater	U.S. EPA	MDEQ	2009		

Issue	Recommendations and Follow-up Actions	Lead Agency	Support Agency	Milestone Date	Affects Protectiveness (Y/N)	
					Current	Future
Some areas in the residential neighborhood adjacent to main plant site have soil concentrations of PBB exceeding MDEQ Part 201 direct contact criteria	Complete the FS for OU1	MDEQ	U.S. EPA	June 2008	Y	Y
	Issue ROD for OU1	U.S. EPA	MDEQ	Dec. 2008		
	Implement remedy for OU1, including areas adjacent to main plant site, and conduct any necessary pre-design sampling	U.S. EPA	MDEQ	2009		
The NAPL collection system must be operated and maintained until protective remedy implemented for OU1 to ensure that site contaminants from OU1 do not recontaminate OU2	Operate & maintain the NAPL collection system to prevent OU1 site contaminants from recontaminating OU2	U.S. EPA/ MDEQ		Ongoing	N	Y
DDT levels in fish have not yet been demonstrated to have decreased to safe levels, so no-consumption fish advisory remains in effect	Keep no-consumption fish advisory in place until DDT levels in fish have been demonstrated to have decreased to safe levels	MDPH	MDEQ/ U.S. EPA	Ongoing	Y	Y
Long-term monitoring of DDT levels in fish and sediment has not yet begun following completion of the OU2 remedial action	Conduct long-term monitoring of DDT levels in fish and sediment	MDEQ/ U.S. EPA		2008	N	N
Implementing and maintaining ICs may be required in the short term and/or long term to assure protectiveness of the remedy site-wide	If the ROD for OU1 determines ICs are necessary, establish ICs in accordance with ROD. The need for ICs at OU2 is under review.	U.S. EPA	MDEQ	Dec. 2008	N	Y

## **X. Protectiveness Statements**

This section contains a protectiveness statement for each OU of the site, as well as a protectiveness statement for the site as a whole.<sup>10</sup>

**OU1:** The remedy at OU1 is not protective because the containment system implemented under the 1982 CJ does not meet the original design specifications, is not functioning as designed, and is not preventing the migration of contaminated groundwater from the main plant site. Some areas of the residential neighborhood adjacent to the main plant site have soil concentrations that exceed the State of Michigan's Part 201 direct contact criteria. In order to ensure protectiveness, the Superfund remedy selection process needs to be completed and a protective remedy implemented for OU1. The remedy selection process will include consideration of whether institutional controls are required in the short term and/or long term to ensure protectiveness of the remedy.

**OU2:** The remedy at OU2 is expected to be protective of human health and the environment once DDT levels in fish have decreased to safe levels. The successful attainment of the specified total DDT risk-based cleanup level in sediments should eventually result in safe DDT levels in fish and eventual elimination of the existing fish consumption advisories, but it will likely take some time to achieve that objective. Operation and maintenance of the NAPL collection system that was installed as an interim response action during the OU2 remedy must continue until a protective remedy is selected and implemented for OU1, to ensure that site contaminants from OU1 do not recontaminate the Pine River sediments. The need for institutional controls at OU2 is under review.

**SITE-WIDE:** The remedial action at OU2 is expected to be protective once DDT levels in fish have decreased to safe levels. However, because the remedy implemented at OU1 under the 1982 CJ is not protective, the site as a whole is not protective of human health and the environment. The remedy at OU1 is not protective because the containment system implemented under the 1982 CJ does not meet the original design specifications, is not functioning as designed, and is not preventing the migration of contaminated groundwater from the main plant site, and some areas of the adjacent residential neighborhood have soil concentrations that exceed the State of Michigan's Part 201 direct contact criteria. In order to ensure protectiveness, the Superfund remedy selection process needs to be completed and a protective remedy implemented for OU1. Additionally, long-term protectiveness may require compliance with use restrictions that prohibit interference with remedy components, limit use of land and groundwater, and advise against fish consumption until standards are met. The remedy

---

<sup>10</sup> Site-wide protectiveness statements for sites with multiple OUs are generally made only after the site has reached construction completion, after all remedies for the site have been selected and constructed. While the Velsicol Chemical site reached the construction completion milestone in 1992 when it was thought that no additional cleanup work was needed at the site, additional cleanup actions have since been required. Since reaching the construction completion milestone, a ROD was issued and a remedial action implemented for OU2, and an RI/FS is currently underway for OU1, with a ROD and remedial action pending for that OU. All remedies for the site, therefore, have not been selected and constructed. Although a site-wide protectiveness statement is therefore not required in this five-year review, one is included nonetheless.

selection process will include consideration of whether institutional controls are required in the short term and/or long term to ensure the protectiveness of the remedy.

## **XI. Next Review**

Another five-year review is required for the Velsicol Chemical site. The next five-year review will be due no later than five years from the signature date of this five-year review.

## FIGURES

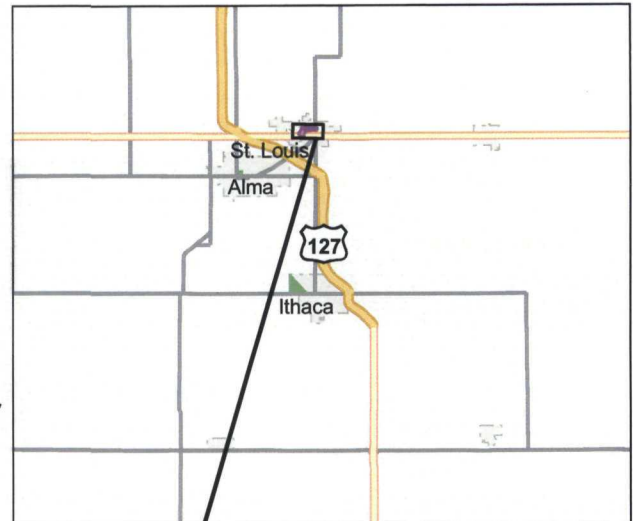


**Velsicol Chemical Corp.  
Gratiot County, MI**

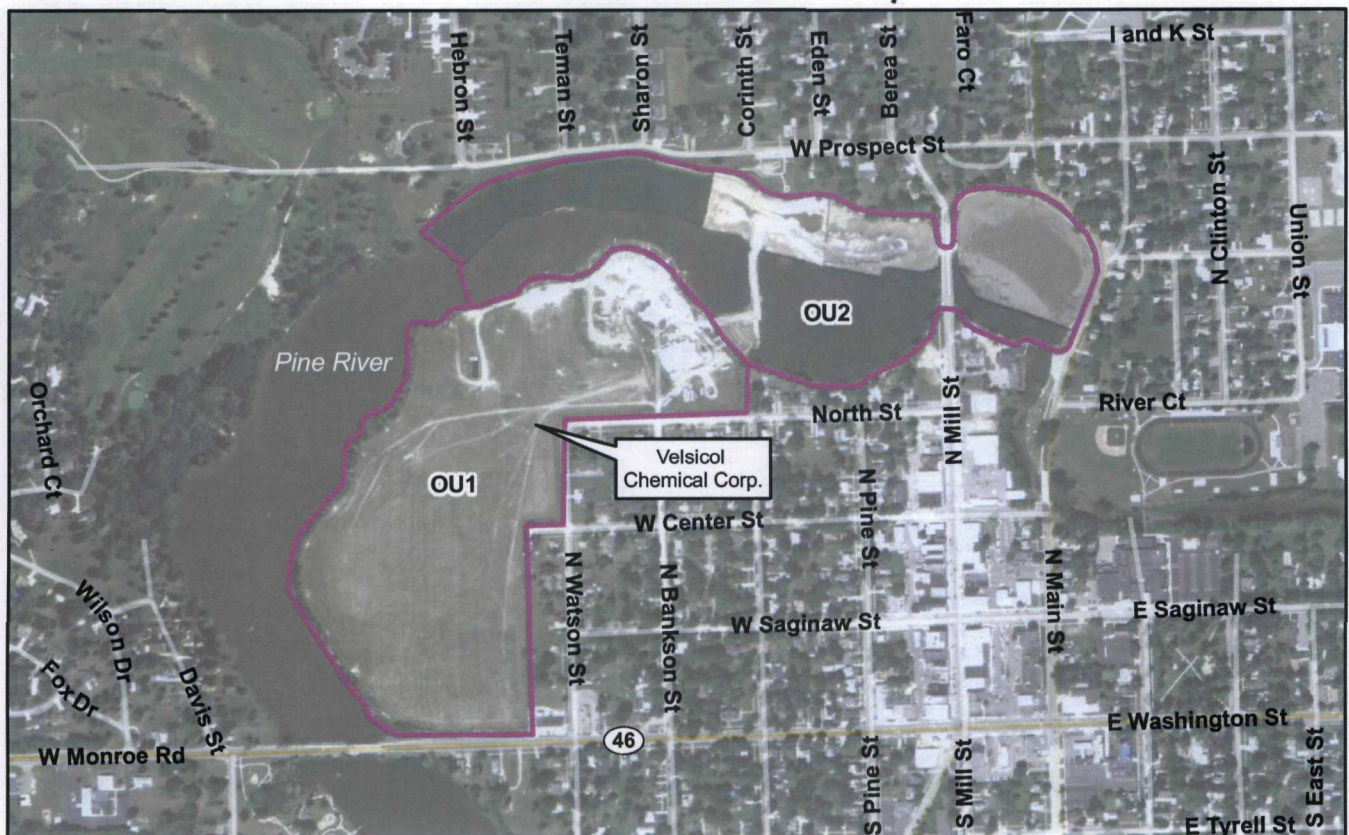
**MID000722439**



State



County



Site

**Figure 1 - Site Location Map**

Produced by Sarah Backhouse  
U.S. EPA Region 5 on 9/17/07  
Image Date: 2005



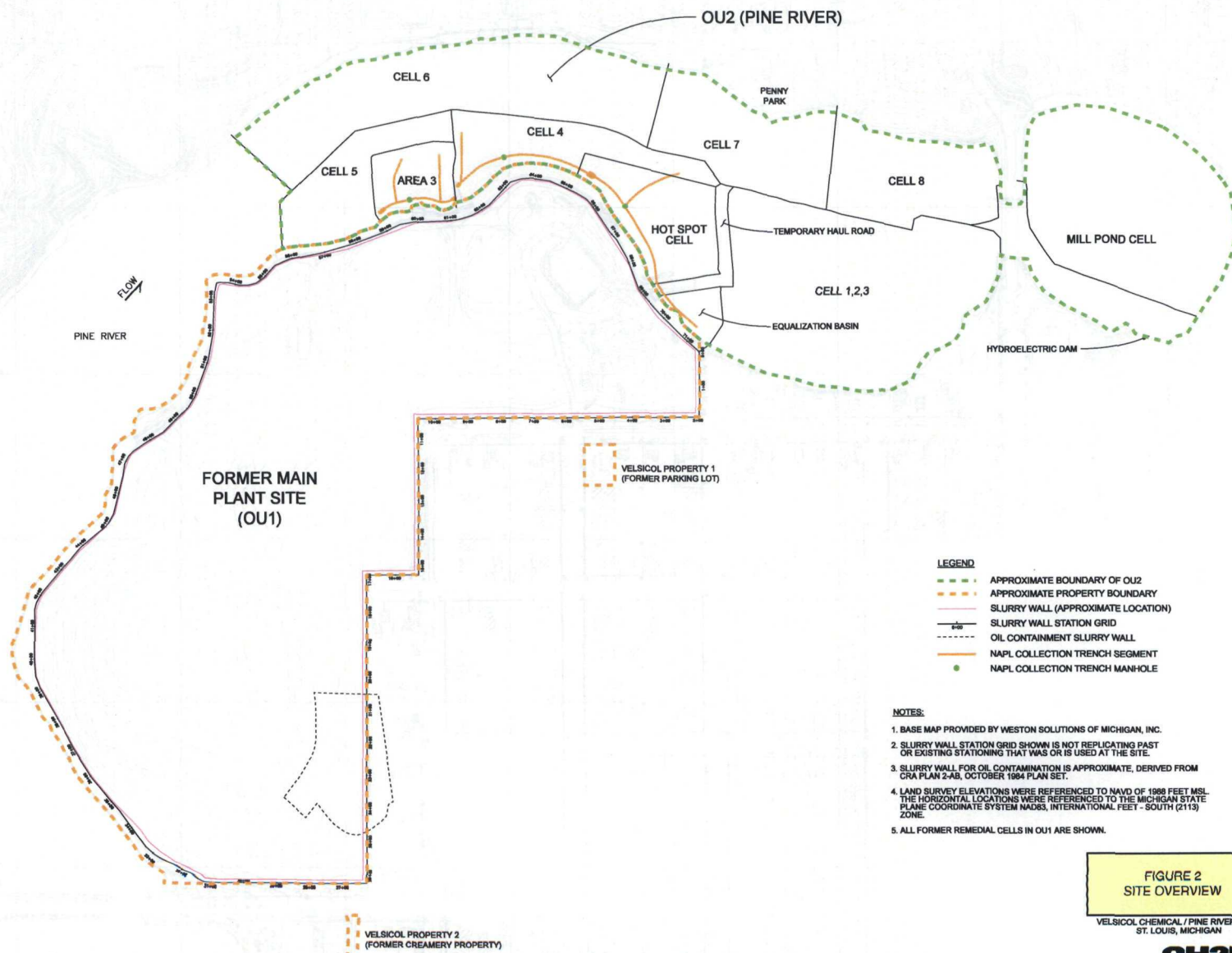
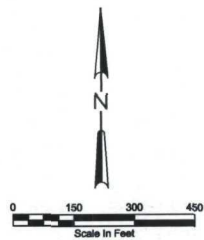


FIGURE 2  
SITE OVERVIEW

VELISCOL CHEMICAL / PINE RIVER SITE  
ST. LOUIS, MICHIGAN

**CH2MHILL**

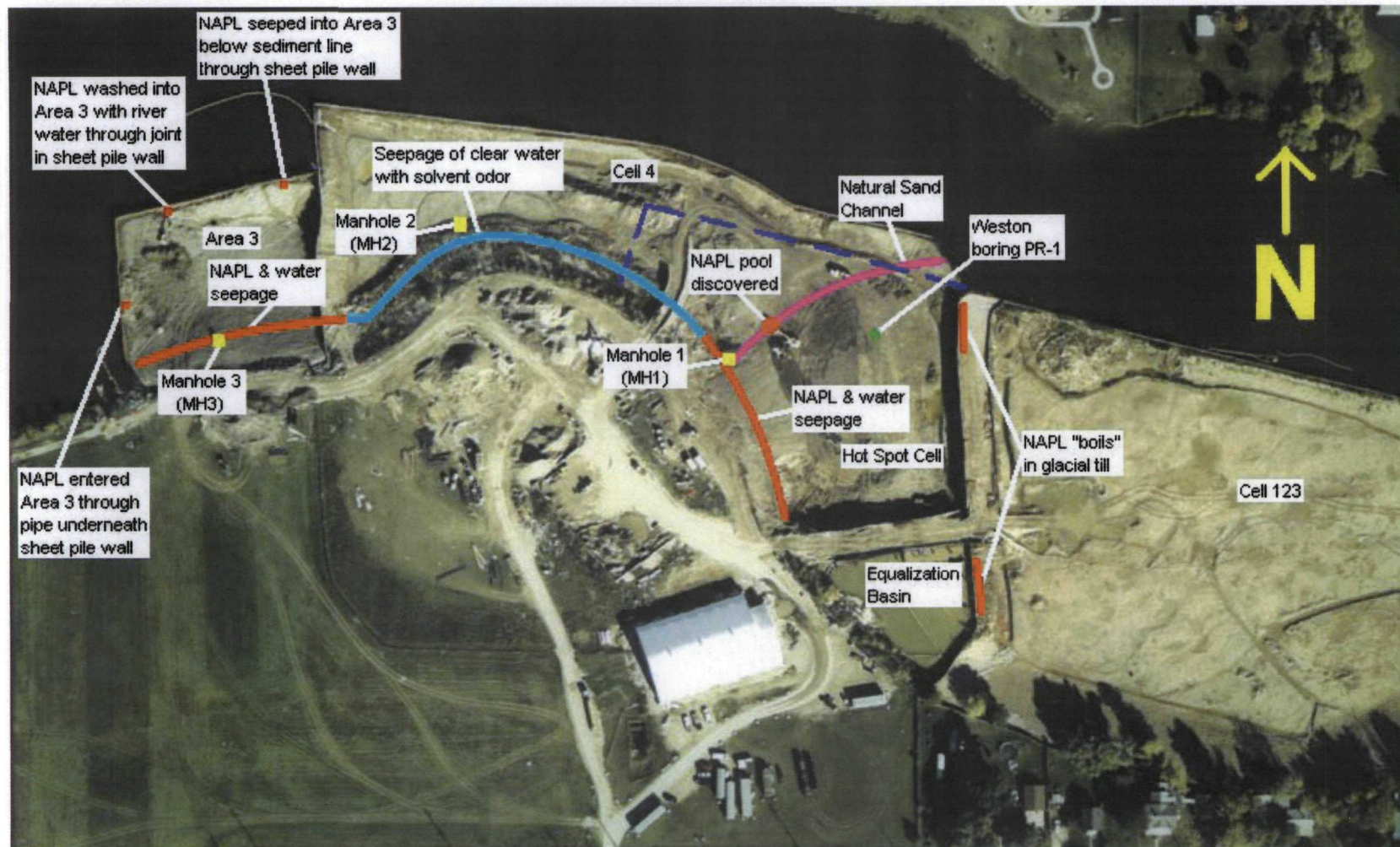
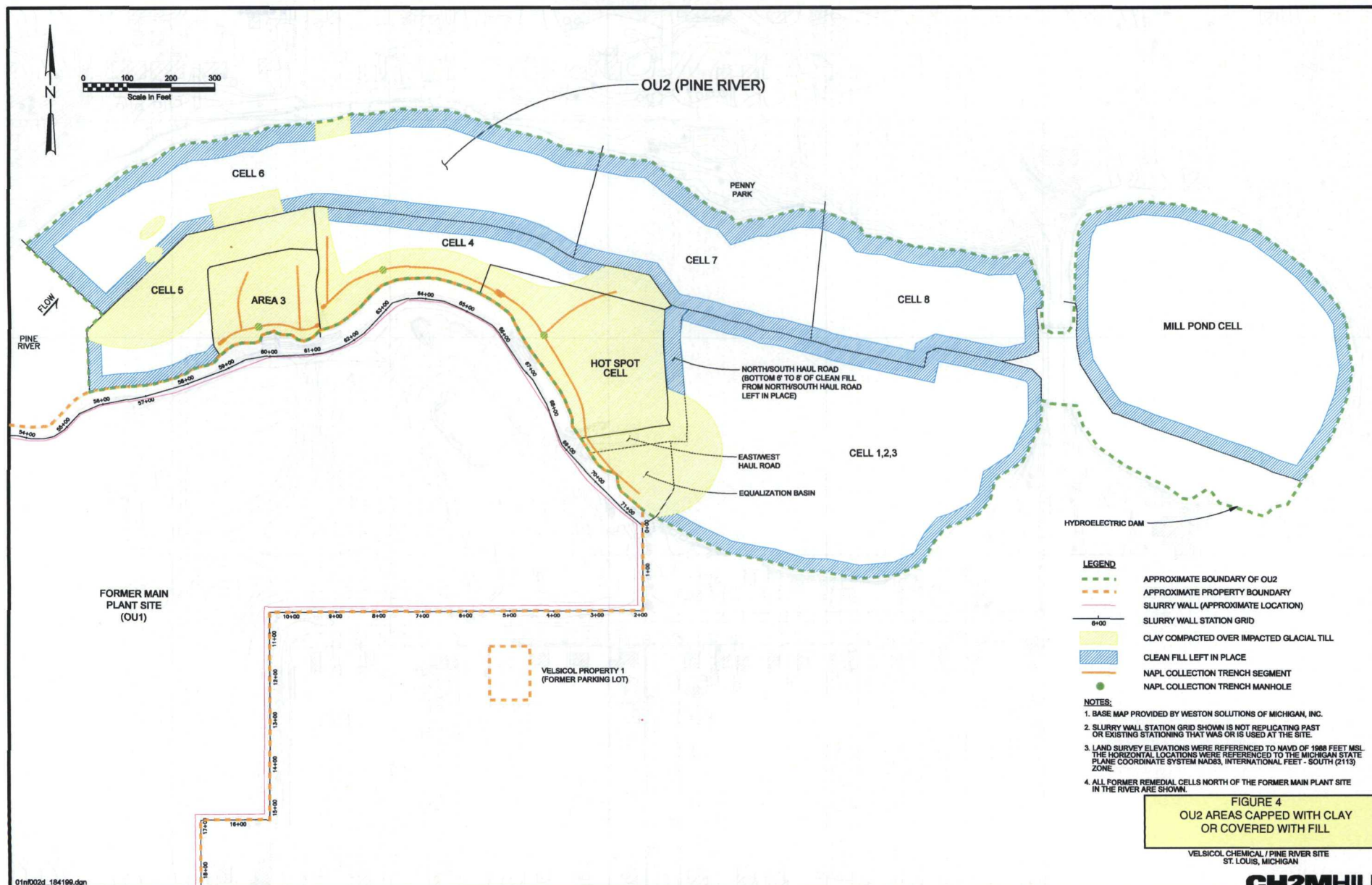


FIGURE 3  
DNAPL OBSERVATIONS DURING REMEDIAL ACTIVITIES  
Velsicol Chemical/Pine River Site, St. Louis, Michigan

Scale: 1"≈195'

Aerial photo dated October 14, 2002



01m002d\_184190.dgn

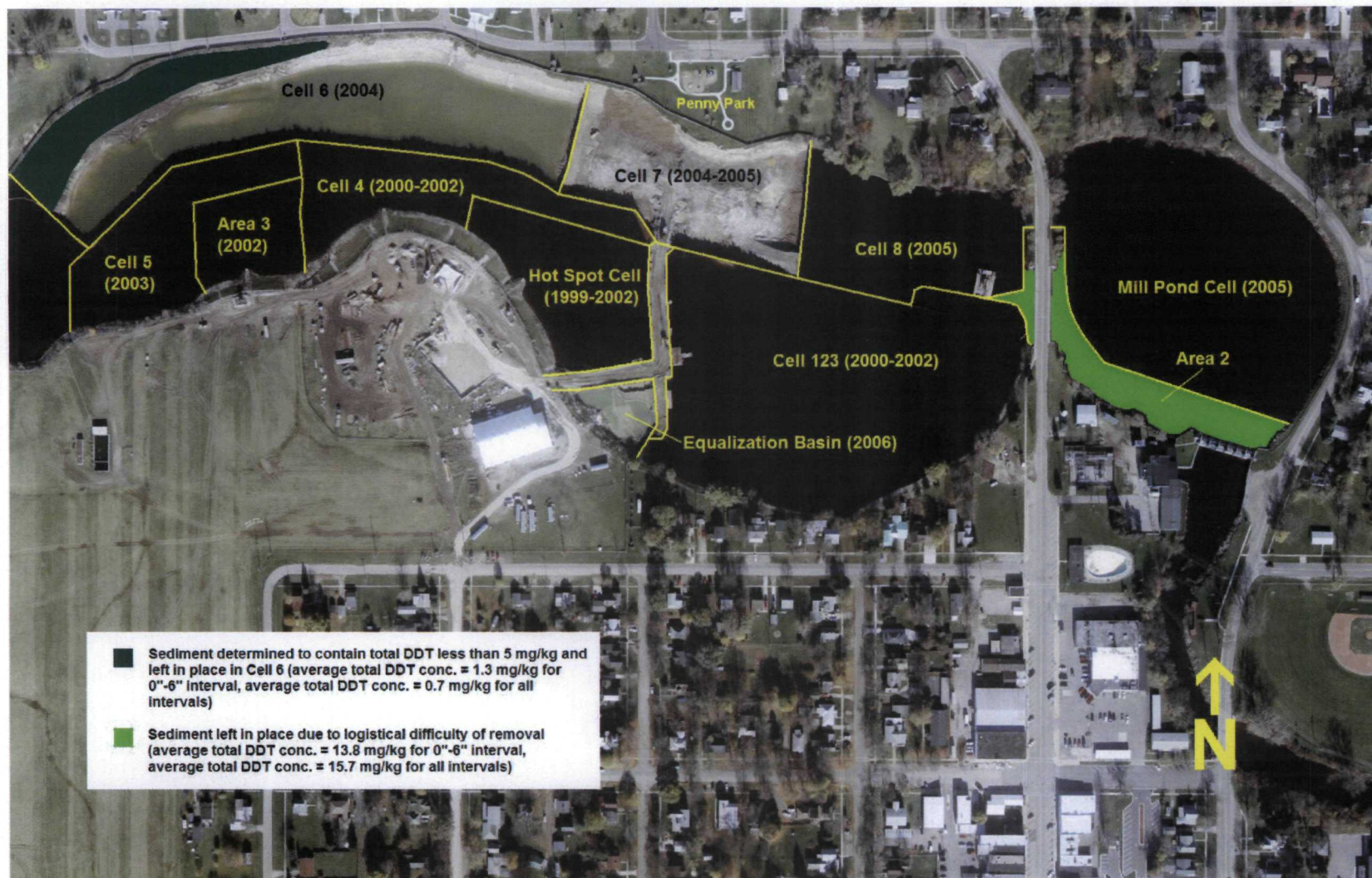


FIGURE 5  
REMEDIAL CELLS AND UNREMIEDIATED AREAS  
Velsicol Chemical/Pine River Site, St. Louis, Michigan

Aerial photo dated November 6, 2004

## ATTACHMENT 1



## **EPA Reviewing Velsicol Chemical Corp Superfund Site**

### **St. Louis, Gratiot County, Michigan**

U.S. Environmental Protection Agency, with assistance from Michigan Department of Environmental Quality, is conducting the third five-year review of the cleanup at the Velsicol Chemical Corp. Superfund site located at 500 Bankson St., St. Louis, Gratiot County. This review will evaluate the effectiveness of previous cleanup actions taken at the site, including removal of contaminated sediments from the Pine River/St. Louis Impoundment area. This review is required to assess whether the cleanup is protecting human health and the environment. The five-year review is scheduled to be completed by September 2007. The next five-year review will be in 2012.

Site information can be found at:

**St. Louis City Library  
312 Michigan Ave.  
St. Louis, Michigan**

Public comments is highly encouraged. Written comments should be postmarked no later than May 11, 2007. Written or oral comments should be addressed to Robert Paulson or Rebecca Frey. Additional site information can be requested from the team members listed below.

**Rebecca Frey**  
Remedial Project Manager  
EPA Region 5 (SR-6J)  
77 W. Jackson Blvd.  
Chicago, IL 60604  
(312) 886-4760  
frey.rebecca@epa.gov

**Robert Paulson**  
Community Involvement Coordinator  
EPA Region 5 (P-19J)  
77 W. Jackson Blvd.  
Chicago, IL 60604  
(312) 886-0272  
paulson.robert@epa.gov

**Toll Free (800) 621-8431,**  
10 a.m. to 5:30 p.m. weekdays.

C  
(  
H  
C

## ATTACHMENT 2

## Five-Year Review Site Inspection Checklist

(Note: Generic checklist was modified to fit the specifics of this site inspection)

I. SITE INFORMATION	
<b>Site name:</b> Velsicol Chemical Corporation site	<b>Date of inspection:</b> September 7, 2007, 1100-1330
<b>Location and Region:</b> St. Louis, MI, Region 5	<b>EPA ID:</b> MID000722439
<b>Agency, office, or company leading the five-year review:</b> U.S. EPA	<b>Weather/temperature:</b> overcast, 73F, SSW winds 15-20 mph
<b>Remedy Includes:</b> (Check all that apply) <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <div style="width: 48%;"> <input checked="" type="checkbox"/> Landfill cover/containment  <input checked="" type="checkbox"/> Access controls  <input type="checkbox"/> Institutional controls  <input type="checkbox"/> Groundwater pump and treatment  <input type="checkbox"/> Surface water collection and treatment  <input checked="" type="checkbox"/> Other: <u>NAPL collection system installed during OU2 sediment removal project</u> </div> <div style="width: 48%;"> <input type="checkbox"/> Monitored natural attenuation  <input type="checkbox"/> Groundwater containment  <input checked="" type="checkbox"/> Vertical barrier walls           </div> </div>	
<b>Attendees:</b> Rebecca Frey, USEPA; Theo VonWallmenich, CH2M HILL	
II. INTERVIEWS - N/A	
III. ON-SITE DOCUMENTS & RECORDS VERIFIED - N/A	
IV. O&M COSTS - N/A	
V. ACCESS AND INSTITUTIONAL CONTROLS <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A	
<b>A. Fencing</b>	
1. <b>Fencing damaged</b> <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Gates secured <input type="checkbox"/> N/A Remarks: <u>Main plant site perimeter fence intact. One gate at NW corner of site needs minor repair &amp;/or new lock.</u>	
<b>B. Other Access Restrictions</b>	
1. <b>Signs and other security measures</b> <input type="checkbox"/> Location shown on site map <input type="checkbox"/> N/A Remarks: <u>Existing signs on perimeter fence intact. "Warning" monument installed during consent judgment remedy remains visible inside main gate.</u>	
<b>C. Institutional Controls (ICs) - N/A</b>	
<b>D. General</b>	
1. <b>Vandalism/trespassing</b> <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> No vandalism evident Remarks: <u>No evidence of trespassers was observed.</u>	
2. <b>Land use changes on site</b> <input type="checkbox"/> N/A Remarks: <u>No land use changes on -site.</u>	
3. <b>Land use changes off site</b> <input type="checkbox"/> N/A Remarks: <u>No land use changes off-site.</u>	

<b>VI. GENERAL SITE CONDITIONS</b>			
<b>A. Roads</b> <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A			
1.	<b>Roads damaged</b> Remarks:	<input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Roads adequate	<input type="checkbox"/> N/A
<b>B. Other Site Conditions</b>			
Remarks: <u>Custodial trust recently resumed mowing of main plant site. Mowing contractor was present on-site during latter portion of site inspection.</u>			
<b>VII. LANDFILL COVERS</b> <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A			
<b>A. Landfill Surface</b>			
1.	<b>Settlement</b> (Low spots) Areal extent _____ Depth _____ Remarks: <u>Capped surface has some low spots. MDEQ's RI report concluded that cap is not properly graded.</u>	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Settlement not evident	
2.	<b>Cracks</b> Lengths _____ Widths _____ Depths _____ Remarks:	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Cracking not evident	
3.	<b>Erosion</b> Areal extent _____ Depth _____ Remarks: <u>Some small areas of erosion observed.</u>	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Erosion not evident	
4.	<b>Holes</b> Areal extent _____ Depth _____ Remarks: <u>Evidence of some burrowing animals observed.</u>	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Holes not evident	
5.	<b>Vegetative Cover</b> <input checked="" type="checkbox"/> Grass <input checked="" type="checkbox"/> Cover properly established <input type="checkbox"/> No signs of stress <input checked="" type="checkbox"/> Trees/Shrubs present Remarks: <u>Vegetative cover generally well-established, and being mowed by custodial trust. Some small trees/shrubs are growing on capped areas of main plant site in certain areas.</u>		
6.	<b>Alternative Cover (armored rock, concrete, etc.)</b> <input checked="" type="checkbox"/> N/A Remarks:		
7.	<b>Bulges</b> Areal extent _____ Remarks:	<input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Bulges not evident Height _____	
8.	<b>Wet Areas/Water Damage</b> <input checked="" type="checkbox"/> Wet areas/water damage not evident during inspection <input type="checkbox"/> Wet areas <input type="checkbox"/> Location shown on site map      Areal extent _____ <input type="checkbox"/> Ponding <input type="checkbox"/> Location shown on site map      Areal extent _____ <input type="checkbox"/> Seeps <input type="checkbox"/> Location shown on site map      Areal extent _____ <input type="checkbox"/> Soft subgrade <input type="checkbox"/> Location shown on site map      Areal extent _____ Remarks: _____		
9.	<b>Slope Instability</b> <input type="checkbox"/> Slides <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> No evidence of slope instability Areal extent _____ Remarks:		

<b>B. Benches</b> <input type="checkbox"/> Applicable                      ■ N/A (Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)	
<b>C. Letdown Channels</b> <input type="checkbox"/> Applicable                      ■ N/A (Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)	
<b>D. Cover Penetrations</b> ■ Applicable <input type="checkbox"/> N/A	
1.	<b>Gas Vents</b> <input type="checkbox"/> Active                      ■ Passive <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks: <u>Approximately 8-10 passive gas vents were installed as part of 1982 consent judgment remedy. Because there is no municipal waste (i.e., decaying organic matter) buried on-site, the gas vents are not really functional.</u>
2.	<b>Gas Monitoring Probes</b> <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance                      ■ N/A Remarks:
3.	<b>Monitoring Wells</b> (within surface area of landfill) <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks: <u>There are many monitoring wells located on-site, some in better condition than others. Some were installed by the PRP in the 1980s, some by EPA in the late-1980s, and many others by MDEQ or EPA during the more recent RI activities. Many of the older wells are no longer used as monitoring wells. Some of the newer wells are locked and others are not. Since completion of the MDEQ RI Report the wells are not being routinely monitored.</u>
4.	<b>NAPL Collection System Manholes/Pumps</b> ■ Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled                      ■ Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks: <u>NAPL collection system was not the focus of the site inspection, so pumps were not operated and manholes not opened during site inspection. All appear in good condition.</u>
5.	<b>Settlement Monuments</b> <input type="checkbox"/> Located <input type="checkbox"/> Routinely surveyed                      ■ N/A Remarks:
<b>E. Gas Collection and Treatment</b> <input type="checkbox"/> Applicable                      ■ N/A	
<b>F. Cover Drainage Layer</b> <input type="checkbox"/> Applicable                      ■ N/A	
<b>G. Detention/Sedimentation Ponds</b> <input type="checkbox"/> Applicable                      ■ N/A	
<b>H. Retaining Walls</b> <input type="checkbox"/> Applicable                      ■ N/A	
<b>I. Perimeter Ditches/Off-Site Discharge</b> <input type="checkbox"/> Applicable                      ■ N/A	

<b>VIII. VERTICAL BARRIER WALLS</b> <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A	
1.	<b>Settlement</b> <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Settlement not evident Areal extent _____ Depth _____ Remarks: <u>Vertical barrier wall (i.e., slurry wall) not really visible during site inspection. Slurry wall was investigated extensively during MDEQ's RI, and data/conclusions are included in RI Report. Major conclusions regarding the slurry wall are also discussed in the five-year review report.</u>
2.	<b>Performance Monitoring</b> Type of monitoring _____ <input type="checkbox"/> Performance not monitored Frequency _____ <input type="checkbox"/> Evidence of breaching Head differential _____ Remarks _____
<b>IX. GROUNDWATER/SURFACE WATER REMEDIES</b> <input type="checkbox"/> Applicable <input type="checkbox"/> N/A	
<b>A. Groundwater Extraction Wells, Pumps, and Pipelines</b> <input type="checkbox"/> Applicable <input type="checkbox"/> N/A	
1.	<b>NAPL Collection System Pumps, Plumbing, and Electrical</b> <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> All required wells properly operating <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks: <u>NAPL collection system was not the focus of the site inspection, so the system was not started up/operated during the inspection. All visible components appear in good condition.</u>
2.	<b>NAPL Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances</b> <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks: <u>Visible, above-ground portions of the system appear in good condition.</u>
<b>B. Surface Water Collection Structures, Pumps, and Pipelines</b> <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A	
<b>C. Treatment System</b> <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A	
<b>D. Monitoring Data</b> - Review of monitoring data was not part of the site inspection.	
<b>E. Monitored Natural Attenuation</b> - N/A	
<b>X. OTHER REMEDIES</b>	
If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.	
<b>XI. OVERALL OBSERVATIONS</b>	
<b>A.</b>	<b>Implementation of the Remedy</b>
Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).  <u>As discussed in MDEQ's RI Report and the five-year review report, MDEQ &amp; EPA have concluded that the OU1 containment system is not effective and is not functioning as designed. No significant findings were noted during the site inspection that were not already addressed in the OU1 RI Report.</u>  <u>As discussed in the five-year review report, long-term monitoring of DDT levels in fish and sediment needs to be conducted to monitor progress and trends in DDT levels in fish.</u>	

<b>B.</b>	<b>Adequacy of O&amp;M</b>
	<p>Describe issues and observations related to the implementation and scope of O&amp;M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.</p> <p><u>NAPL collection system was not the focus of the site inspection. As discussed in the five-year review report, operation &amp; maintenance of the NAPL collection system must continue until a remedy is implemented for OU1, to ensure that site contaminants from OU1 do not recontaminate the Pine River.</u></p>
<b>C.</b>	<b>Early Indicators of Potential Remedy Problems</b>
	<p>Describe issues and observations such as unexpected changes in the cost or scope of O&amp;M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.</p> <p><u>N/A.</u></p>
<b>D.</b>	<b>Opportunities for Optimization</b>
	<p>Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.</p> <p><u>N/A.</u></p>

## ATTACHMENT 3

2007



**EPA Interviewing  
Area Residents for the  
Velsicol Chemical Corp.  
Superfund Site  
Five-Year Review**  
St. Louis, Michigan

U.S. Environmental Protection Agency, with assistance from the Michigan Department of Environmental Quality, wants to talk with residents as part of the current five-year review of the cleanup at the Velsicol Chemical Corp. Superfund site located at 500 Bankson St., St. Louis. Public input is an important part of the five-year review.

If you would like to meet with EPA or DEQ officials about the review, please come to St. Louis City Library, 312 Michigan Ave. on May 15 anytime from 2 p.m. to 4 p.m. or 6 p.m. to 8 p.m. (library closing). You may also present written material on the 15th. An appointment is not required. Site information can be found at the St. Louis City Library.

Additional site information can be requested from the team members listed below.

**Rebecca Frey**  
Remedial Project Manager  
EPA Region 5 (SR-6J)  
77 W. Jackson Blvd.  
Chicago, IL 60604  
(312) 886-4760  
frey\_rebecca@epa.gov

**Robert Paulson**  
Community Involvement Coordinator  
EPA Region 5 (P-19J)  
77 W. Jackson Blvd.  
Chicago, IL 60604  
(312) 886-0272  
paulson\_robert@epa.gov

Toll-free (800) 621-8431,  
10 a.m. to 5:30 p.m. weekdays

**Scott Cornelius**  
Project Manager, Superfund Section  
Remediation & Redevelopment Division  
Michigan Department of Environmental Quality  
P.O. Box 30426  
Lansing, MI 48909  
(517) 373-7367  
cornelius@michigan.gov

4-29

2007

Friday, May 4, 2007 THE MORNING SUN • 7B

6020

6090 RVs / Trailers



**EPA Interviewing  
Area Residents for the  
Velsicol Chemical Corp.  
Superfund Site  
Five-Year Review**

St. Louis, Michigan

U.S. Environmental Protection Agency, with assistance from the Michigan Department of Environmental Quality, wants to talk with residents as part of the current five-year review of the cleanup at the Velsicol Chemical Corp. Superfund site located at 500 Bankson St., St. Louis. Public input is an important part of the five-year review.

If you would like to meet with EPA or DEQ officials about the review, please come to St. Louis City Library, 312 Michigan Ave. on May 15 anytime from 2 p.m. to 4 p.m. or 6 p.m. to 8 p.m. (library closing). You may also present written material on the 15th. An appointment is not required. Site information can be found at the St. Louis City Library.

Additional site information can be requested from the team members listed below.

**Rebecca Frey**

Remedial Project Manager  
EPA Region 5 (SR-6J)  
77 W. Jackson Blvd.  
Chicago, IL 60604  
(312) 886-4760  
frey\_rebecca@epa.gov

**Robert Paulson**

Community Involvement Coordinator  
EPA Region 5 (P-19J)  
77 W. Jackson Blvd.  
Chicago, IL 60604  
(312) 886-0272  
paulson\_robert@epa.gov

Toll-free (800) 621-8431,  
10 a.m. to 5:30 p.m. weekdays

**Scott Cornelius**

Project Manager, Superfund Section  
Remediation & Redevelopment Division  
Michigan Department of Environmental Quality  
P.O. Box 30426  
Lansing, MI 48909  
(517) 373-7367  
cornelius@michigan.gov

5-4

## APPENDIX

# Velsicol Chemical 5 Year Review – Public Interviews

Date 5-15-07

Name

Address

Telephone Number

Alternate Number

If we need to contact you, what is the best way?

phone

## Using your own words.

1. How does the site impact you and your family?

Visually, Recreationally, Physically (Health)

2. What are your concerns or fears about the site?

Health concerns in river and in water systems

3. Is the EPA and/or the Michigan doing the right thing in St. Louis?

If not, what can we do better?

So far - but don't stop before generation it is done! Don't leave it for another to worry about. Fix it for good!

4. What is your vision of the site 5 or 10 years from now?

Beautiful Park with Pavilion, bike trails, fishing

5. How do you get current site information?

Newspaper - Gratiot County Herald

6. Have you used the site information in the public library?

No

7. Do you think this EPA/DEQ team is truthful?

Yes

8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?

Comments. Yes, but it's really all about the money to the EPA + DEQ, not necessarily what is best for St. Louis.

9. Where do you get most of your local (non-site) information?

Newspaper - Gratiot County Herald

10. How can we get site information to you and the public better?

TV, Radio, mailings

What do you want us to know? (any subject)

[ATTACHED]

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

I want the Superfund Site cleaned up entirely. If we allow the EPA to continue with the "cap and contain" policy we are passing the buck onto future generations. I believe that this problem will not go away by burying it. Please do not waste the work that has already been done by quitting before it is entirely cleaned up!

I have 3 children in the St. Louis School district. For 13 years they will be exposed to St. Louis water from the drinking fountains and school lunches. The schools cannot afford to bring in bottled water for all the students anymore. If my kids want a simple drink from the fountain at school they are running the risk of drinking toxic pollutants. Would you live here and drink the water every day for the rest of your life? Would you allow your children to grow up drinking St. Louis water?

The city of St. Louis has suffered enough over this. We do not dare swim or eat fish from our beautiful Pine River. An exceptional natural resource running straight through our city has been tainted through no fault of our own. I want St. Louis to be known for its beautiful river, wonderful people, and successful businesses, without the stigma of a buried toxic dump that leaks pollutants into our river system and drinking water.

Please take my comments to heart and know that I feel very strongly about this, as I am sure you would if your family lived here.

Sincerely,

A large, solid black rectangular redaction box covering the signature and any handwritten notes.

## Velsicol Chemical 5 Year Review – Public Interviews

Date \_\_\_\_\_

Name \_\_\_\_\_

(Please Print)

Address \_\_\_\_\_

Telephone Number \_\_\_\_\_

Alternate Number \_\_\_\_\_

If we need to contact you, what is the best way? \_\_\_\_\_

### Using your own words.

1. How does the site impact you and your family?

*We live very close to the site in Orchard Hills.*

2. What are your concerns or fears about the site?

*Contamination in the air and on land.*

3. Is the EPA and/or the Michigan doing the right thing in St. Louis? *yes*

If not, what can we do better? *Finish the cleaning*

4. What is your vision of the site 5 or 10 years from now?

*just beautification that is clean and purification and healthy*

5. How do you get current site information?

*papers*

6. Have you used the site information in the public library?

*no*

7. Do you think this EPA/DEQ team is truthful? *yes*

8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?

Comments. *yes*

9. Where do you get most of your local (non-site) information?

10. How can we get site information to you and the public better?

What do you want us to know? (any subject)

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

## Velsicol Chemical 5 Year Review – Public Interviews

Date 5-15-2003

Name [REDACTED]

(Please Print)

Address [REDACTED]

Telephone Number [REDACTED]

Alternate Number [REDACTED]

If we need to contact you, what is the best way? \_\_\_\_\_

Using your own words.

1. How does the site impact you and your family?
2. What are your concerns or fears about the site?
3. Is the EPA and/or the Michigan doing the right thing in St. Louis?  
If not, what can we do better?
4. What is your vision of the site 5 or 10 years from now?
5. How do you get current site information?
6. Have you used the site information in the public library?
7. Do you think this EPA/DEQ team is truthful? Y-3
8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?  
Comments. Y-3
9. Where do you get most of your local (non-site) information?
10. How can we get site information to you and the public better?

What do you want us to know? (any subject)

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

# Velsicol Chemical 5 Year Review – Public Interviews

Date May 15, 07

Name

(Please Print)

Address

Telephone Number

Alternate Number

If we need to contact you, what is the best way? Phone or Mail or person.

## Using your own words.

- Health*
1. How does the site impact you and your family? Very much, Health issues, Bad News about DDT, Dump site etc.
  2. What are your concerns or fears about the site? Continuation of leaking of wall with possibility of more dangerous material
  3. Is the EPA and/or the Michigan doing the right thing in St. Louis? No  
If not, what can we do better? remove the dangers.
  4. What is your vision of the site 5 or 10 years from now? Little change !!!
  5. How do you get current site information? Newspapers; also a member of the Task Force
  6. Have you used the site information in the public library? Yes life experience
  7. Do you think this EPA/DEQ team is truthful? 50/50
  8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?  
Comments. they only give us the information they want to publish?
  9. Where do you get most of your local (non-site) information? Task Force
  10. How can we get site information to you and the public better? ?

What do you want us to know? (any subject)

political interests

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

## Velsicol Chemical 5 Year Review – Public Interviews

Date 5/15/07

Name \_\_\_\_\_

(Please Print)

Address \_\_\_\_\_

Telephone Number \_\_\_\_\_

Alternate Number \_\_\_\_\_

If we need to contact you, what is the best way? \_\_\_\_\_

Using your own words.

1. How does the site impact you and your family? *water quality/soil. we have city water*

2. What are your concerns or fears about the site?

*I worry about the health*

3. Is the EPA and/or the Michigan doing the right thing in St. Louis?

If not, what can we do better? *We want to - \$ funding.*

4. What is your vision of the site 5 or 10 years from now?

5. How do you get current site information? *internet*

6. Have you used the site information in the public library?

7. Do you think this EPA/DEQ team is truthful? *give citizens information that is not in the news / possibly*

8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?

Comments. *no*

*Questions remain -*

9. Where do you get most of your local (non-site) information?

10. How can we get site information to you and the public better?

*e mail*

*Not for reuse*

What do you want us to know? (any subject)

*Complete clean-up*

*- site related information  
Internet - Dead links -*

*Site taking long time  
PRSA - open site -  
Problems with  
not giving info  
People informed -*

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

# Velsicol Chemical 5 Year Review – Public Interviews

Date May 16, 2007

Name \_\_\_\_\_

(Please Print)

Address \_\_\_\_\_

Telephone Number \_\_\_\_\_

Alternate Number \_\_\_\_\_

If we need to contact you, what is the best way? telephone

Using your own words.

1. How does the site impact you and your family? I live on the river and if I wanted to sell my property, the negative impact of the site affects the ability to sell.

2. What are your concerns or fears about the site?

3. Is the EPA and/or the Michigan doing the right thing in St. Louis? My major concern is chemicals getting into the drinking water supply. The unknown health effects of some of the chemicals has not been determined.

4. What is your vision of the site 5 or 10 years from now?

5. How do you get current site information? Completely cleaned up and realigned for productive use.

6. Have you used the site information in the public library? Mainly the newspaper

7. Do you think this EPA/DEQ team is truthful?

No

8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?

Comments.

9. Where do you get most of your local (non-site) information?

10. How can we get site information to you and the public better? newspaper

more information in city newsletter

monthly

What do you want us to know? (any subject)

internet

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

## Velsicol Chemical 5 Year Review – Public Interviews

Date 5/15/07

Name \_\_\_\_\_

(Please Print)

Address \_\_\_\_\_

Telephone Number \_\_\_\_\_

Alternate Number \_\_\_\_\_

If we need to contact you, what is the best way? phone

Using your own words.

1. How does the site impact you and your family?
2. What are your concerns or fears about the site?
3. Is the EPA and/or the Michigan doing the right thing in St. Louis?  
If not, what can we do better?
4. What is your vision of the site 5 or 10 years from now?
5. How do you get current site information?
6. Have you used the site information in the public library?
7. Do you think this EPA/DEQ team is truthful?
8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?  
Comments.
9. Where do you get most of your local (non-site) information?
10. How can we get site information to you and the public better?

What do you want us to know? (any subject)

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

# Velsicol Chemical 5 Year Review – Public Interviews

Date 5/15/07

Name \_\_\_\_\_

(Please Print)

Address \_\_\_\_\_

Telephone Number \_\_\_\_\_

Alternate Number \_\_\_\_\_

If we need to contact you, what is the best way? \_\_\_\_\_

## Using your own words.

1. How does the site impact you and your family?

site is leaking & contain. moving

2. What are your concerns or fears about the site? DRINKING WATER CONTAMINATION.

3. Is the EPA and/or the Michigan doing the right thing in St. Louis?

If not, what can we do better?

COMPLETE CLEANUP - otherwise people down the road

concerned about remedy decision -- complete cleanup vs. something less will have to deal with.

4. What is your vision of the site 5 or 10 years from now?

want site to be useable - prime riverfront property

5. How do you get current site information? GRATTOI COUNTY HERALD, ST. LOUIS CITY NEWSLETTERS

Heard about interviews 2nd-hand via Janis email

↓  
# in here

6. Have you used the site information in the public library?

7. Do you think this EPA/DEQ team is truthful?

No reason yet to doubt EPA / DEQ

8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?

Comments.

9. Where do you get most of your local (non-site) information?

10. How can we get site information to you and the public better?

newspapers, city newsletter

What do you want us to know? (any subject)

PLEASE DO A COMPLETE REMOVAL OF CONTAMINATION AT THE SITE  
AND TAKE IT AWAY FROM ST. LOUIS.

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

## Velsicol Chemical 5 Year Review – Public Interviews

Date 5-15-07

Name Dianne Beretta

(Please Print)

Address [REDACTED]

Telephone Number [REDACTED]

Alternate Number                     

If we need to contact you, what is the best way?                                     

Using your own words. See attached

1. How does the site impact you and your family?
2. What are your concerns or fears about the site?
3. Is the EPA and/or the Michigan doing the right thing in St. Louis?  
If not, what can we do better?
4. What is your vision of the site 5 or 10 years from now?
5. How do you get current site information?
6. Have you used the site information in the public library?
7. Do you think this EPA/DEQ team is truthful?
8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?  
Comments.
9. Where do you get most of your local (non-site) information?
10. How can we get site information to you and the public better?

What do you want us to know? (any subject)

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

To: Ms. Rebecca Fry  
U.S. EPA Region 5  
Remedial Project Manager, Velsicol Chemical Superfund Site

From: Ms. Dianne D. Borrello  
Technical Advisor  
Pine River Superfund Citizens Task Force (Community Action Group, CAG)

RE: Comments on the 5 year review of the Velsicol Chemical Superfund Site, St. Louis, Michigan.

The remediation efforts associated with the Pine River sediment remediation (OU 2) that has recently been completed for this site are commendable. There are, however, issues associated with the plant site (OU 1) and surrounding area that are of an outstanding concern. These main issues are summarized below.

- The EPA discovered that the City of St. Louis' **public drinking water was contaminated by pCBSA** in 2004. The EPA failed to share this information with the City of St. Louis or the Michigan Department of Environmental Quality for one year. The EPA essentially lied to the public during this year as it was understood that EPA was testing the public water supply and would relay any contamination detected. To wait to confirm is understandable, to hide the fact that the public water supply is contaminated for a year is indefensible. This action completely wiped away any trust that the community had begun to have in the EPA in recent years.
- The CAG was unaware that since 2003 **groundwater was being skimmed off of the top of NAPL** collected in the NAPL collection trench and added to the equalization basin until this information appeared in the Review of Final 2005 Clean-up Status Report, Phase 2 Remedial Action prepared by CH2MHill dated October 2006. During 2005 groundwater samples were collected from the three NAPL collection trench manholes "for the purpose of determining if the onsite water treatment plant could treat undiluted groundwater from the manholes (groundwater from the manholes had been treated previously during 2003 and 2004, but it had been greatly diluted with river water)." Notable results included estimated concentrations of mercury and DDT and volatile organic compounds. The highly toxic male sterilent, 1, 2-dibromo-3-choloropropane was found at estimated concentrations of 51.8 parts per billion! This water was being skimmed-off of a hazardous waste, diluted with river water and put through the on-site treatment system. The on-site treatment system was not designed to handle this waste stream and, as stated in the cited report, could not be directly pumped to the treatment without the dilution of river water. When questioned on this matter the EPA simply said they were not required to be permitted for the discharge and considered it that same as treating river water. No industry would be allowed to handle their waste stream in this manner.

- The Human Health Risk Assessment included in the RI fails to recognize **maternal body burden and the human fetus** as necessary components AND fails to identify the risks of the **synergistic affect** of the cocktail of chemicals found at the site. These are BIG and FUNDAMENTAL criticisms of EPA's methods. Because the human health risk assessment model used in the RI does not recognize maternal body burden, the human fetus or the synergistic effects of contaminants it is not an inadequate model upon which to base potential remediation strategies.
- Although the RI has been completed and the FS process has begun , the **ecological assessment** of 20-30 miles of the river has not been done.
- As noted in the RI, **no wells were installed in the till or lower outwash unit in the northeast portion of the site** where contamination is expected to be the highest (this was to prevent creating a conduit for contaminants). Additionally, wells were not screened in many instances to detect the presence of NAPL. If NAPL were present the concentration of contaminants would be much higher than detected in the dissolved phase. Therefore the relative risk associated with groundwater at the site has not been fully evaluated, particularly the risk associated with the potable use of deep groundwater.
- The **future ability to use the aquifers** hydraulically connected to the Former Plant Site and Burn Area is very questionable. The contaminants continue to leak into the aquifer and the river. The RI states that the NAPL moves faster than water through the slurry wall. When the NAPL interception trench was installed as a **temporary interim** measure, an audience member at a CAG meeting questioned the CH2MHILL representative if he had ever known of a site where an interceptor trench had effectively captured escaping contaminants and the response was roughly "don't you want to be the first?" It is important to emphasize the following comment in the RI *"Currently, the effectiveness of the NAPL collection trench and high-density polyethylene (HDPE)/clay barrier is unknown; therefore, it is impossible to say with certainty that NAPL is not entering the river."* Given the complex glacial geology at the site and the different phases of contaminants in groundwater (DNALP, LNAPL and dissolved) it would be virtually impossible to reverse the downward gradient of the contaminants by groundwater pumping. The MDEQ agrees with this position. CH2MHill asserts that reversal of groundwater flow direction can be done, however they are not an independent entity and would gain financially by drawing out remediation activities for as long as possible.
- The lack of recent information regarding the nature and conditions of the five off-site **deep wells** (Breckenridge Radioactive site, Velsicol Well No. 2, two wells on Wells Road and one on State Road) strongly suggests that they should be considered potential sources of contamination and investigation at these wells is warranted

- It has been proven that a containment system with no bottom liner **has not and cannot** contain the contaminants at the site and therefore containment should be eliminated as a viable remediation alternative. It is imperative that the source of contamination, the shallow outwash unit, be **removed** as part of the final remediation process to prevent the migration of contaminants into the drinking water aquifer for the City of St. Louis and the Pine River. **Any alternative remedial action that allows leaving the source material in place (regardless of cap or slurry wall repair or pump and treat systems) or expansion of the waste site is unacceptable, shortsighted and abominable.** Such a remedial action would be reminiscent of the corrupt actions taken in the 1980s. As Hugh Kaufman, assistant to the director of EPA's Division of Hazardous Site Control at the time of the Velsicol settlement said back in 1982 "[T]he action today sent out a 'clear signal' that companies that improperly dispose of hazardous wastes could negotiate with the agency at the last minute and wind up paying only administrative costs." Following this statement Mr. Kaufman nearly lost his job in a corrupt system which brings to mind the current Joseph Wilson/Valere Plame-Wilson scandal. The emperor has no clothes - capping the contamination and leaving hazardous waste in unlined glacial till is what has resulted in the current multimillion dollar remediation. It is not anticipated that remediation costs will decrease in the future nor given the dire state of the Michigan economy is it foreseeable that the State of Michigan will have monies to address the contamination at this site once EPA walks away. This site needs to have a complete and FINAL remedy. Leaving hazardous waste in an unlined landfill adjacent to a river is not acceptable.

# Velsicol Chemical 5 Year Review – Public Interviews

Date 5-15-07

Name Murray Borrello

Address [REDACTED]

Telephone Number [REDACTED]

Alternate Number [REDACTED]

If we need to contact you, what is the best way? Telephone

Attached to this  
are formal, written  
Comments. Please  
Read.

## Using your own words.

1. How does the site impact you and your family? We spend time in St. Louis, have friends in St. Louis and conduct research on the River upstream.
2. What are your concerns or fears about the site? contaminants will remain and create constant risk to human & environ health. We also fish on P.R.
3. Is the EPA and/or the Michigan doing the right thing in St. Louis?  
If not, what can we do better? Yes - so far. River cleanup was successful. No - Mistrust & comments
4. What is your vision of the site 5 or 10 years from now? Unlimited Redevelopment possibility. No long term Pump & Treat
5. How do you get current site information? Duh!
6. Have you used the site information in the public library? Yes - frequently
7. Do you think this EPA/DEQ team is truthful? No - see my comments
8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?  
Comments. No - see my comments
9. Where do you get most of your local (non-site) information? Duh
10. How can we get site information to you and the public better?  
I believe we need to reach more residents - especially inner city area

What do you want us to know? (any subject)

see comments

Survey who/ how often & how about site situation

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

May 15, 2007

To: Ms. Rebecca Frey, Remedial Project Manager  
U.S. EPA, Region V  
77 W. Jackson Blvd  
Chicago, IL 60604

From: Murray Borrello, Chair: Technical Advisory Committee  
Velsicol Superfund Community Advisory Group (CAG)  
Director of Environmental Studies, Alma College, Alma, MI 48801

RE: **Five Year Review Comments**

**Brief Review of Activities: 2002 – 2007**

**Pine River Cleanup**

- NAPL discovered and characterized (to some degree)
- Interceptor trench installed to collect NAPL
- East side of Pine River cleanup completed
- West side of Pine River cleanup completed
- Back-dam (mill pond) completed
- Decommissioning of infrastructure for river cleanup

**Former Velsicol Plant Site Investigation (RI)**

- JSAP completed
- RI completed
- Expansion of purview to include “burn pit” area across river

**Other Noteworthy Activities**

- Downstream assessment plan completed
- Downstream sampling halted
- NAPL assessment
- pCBSA discovery in St. Louis city drinking water
- Sentry wells installed?

### **Positive Aspects of EPA Activities 2002-2007**

- River cleanup was successful. Levels of contaminants are far below initial RI/FS and R.O.D. specifications. The Pine River just downstream of M-46 to the St. Louis dam has potential for unlimited recreation if there were no other negative inputs, ie. Plant site, possibly burn pit, etc...
- JSAP and RI contain incredibly useful and important information. A lot of time and effort went into data collection and analysis in these documents.
- USEPA was very responsive to the community in terms of having technical consultants at meetings in which they were needed. There was almost always someone with the appropriate technical knowledge available to answer questions at both the technical advisory meetings (TAG meetings) and general CAG meetings.
- The onsite coordinators were excellent, in particular Danny Lynch.

### **Negative Aspects of EPA Activities 2002-2007**

- Air quality during cleanup was problematic, though USEPA did make a great deal of effort to address this. What is needed is more “real-time” air quality monitoring and sampling – not knowledge of air quality violations after the fact.
- Relationships with residents along the river were not as good as they could have been. Soil concentrations of DDT and other chemicals increased during the cleanup process. Though, perhaps an unavoidable consequence, USEPA was not always forthcoming and as responsive as they could have been to the residents closest to the area of cleanup.
- USEPA and MDEQ have not conducted caged fish studies since 2002 despite the fact that people are still observed fishing and most likely consuming the fish. Ongoing (annual) monitoring of wildlife – especially fish would be helpful for the community to gauge the level of risk that still exists in the river.
- USEPA refused to mandate an appropriately high level of protective clothing for their employees when sampling in the vicinity of high concentrations of 1,2 Dibromo-3-chloropropane (DBCP) on the former Velsicol plant site despite the fact that state workers were in the same area at a higher level of protection.
- USEPA and MDEQ had long bouts of internal bickering that prolonged sampling and analysis for the Remedial Investigation
- USEPA failed to notify the community of St. Louis that residents were consuming detectable levels of paraChlorobenzene sulfonic acid (pCBSA) in their drinking water **for over a year after it was detected**. This is not merely a “negative aspect” it is unconscionable and borders on criminal. The reason given the community was that the levels could have been “false positives” and there needed to be confirmation analyses. This does not excuse the fact that children and pregnant women were consuming potentially contaminated water and should have been given the option of switching their water source as a precautionary measure. This still boggles my mind as to what would possess the USEPA to do this and has changed the tenor of the relationship with the community permanently.

### Summary

When reading the positive aspects listed above, the common thread that exists throughout is the great deal of information exchange and open communication the USEPA and CAG/TAG worked hard to develop and enjoyed. After a rocky start with USEPA and CAG/TAG somewhat distrustful of the other's intentions, a pattern of informal as well as formal exchange of information and coordinated problem-solving evolved and thrived. I believe strongly that the Pine River is cleaner because of it and that we set a model of communication and coordinated effort that could be successful at other Superfund sites.

As we approach the final stage of what may be another "interim" measure dealing with highly contaminated properties in and around St. Louis, we begin a de-evolution of sorts that has restored the mistrust that we had initially. USEPA failing to require protection of their workers at least equal to the state's workers (whether justified or not) sent a message to the community that people are expendable – even in the smallest sense.

The most important action was the failure of USEPA to notify the community of pCBSA in their drinking water. And further, failure of USEPA to help the City find an alternative drinking water source. These acts were calculated and indefensible. It demonstrates to the City of St. Louis and the broader community that we are expendable. After all, when the R.O.D. is signed and the remedy is in place, all of you will have no reason to see us, sit with us, drink our water or visit our town.

2002-2005 demonstrated a sense of hope that we could work together to be rid of the stigma and contamination that has existed for decades. 2005-2007 has brought us the feeling that hope for a full and complete cleanup – a remedy that would restore the economic viability and riparian rights to the community will be better placed in another 20 years, when USEPA visits this site again – at a much higher cost.

# Velsicol Chemical 5 Year Review – Public Interviews

Date \_\_\_\_\_

Name \_\_\_\_\_

Address \_\_\_\_\_

Telephone Number \_\_\_\_\_

Alternate Number \_\_\_\_\_

If we need to contact you, what is the best way? Phone -

Using your own words.

1. How <sup>did</sup> does the site impact you and your family?

2. What are your concerns or fears about the site?

3. Is the EPA and/or the Michigan doing the right thing in St. Louis?

If not, what can we do better?

4. What is your vision of the site 5 or 10 years from now?

5. How do you get current site information?

6. Have you used the site information in the public library?

7. Do you think this EPA/DEQ team is truthful?

8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?

Comments.

9. Where do you get most of your local (non-site) information?

10. How can we get site information to you and the public better?

What do you want us to know? (any subject)


low impact — hence

Dirt -  
Clean up truck  
traffic  
1 block from WA -  
Best of knowledge  
a red you are -  
Looking for water  
neg. Results -

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_



Ms. Rebecca Fry  
U.S. Environmental Protection Agency  
Region 5 Office  
77 West Jackson Blvd  
Chicago, IL 60604-3590

May 8, 2007

Subject: 5-year review of the Velsicol Chemical Site, St. Louis , Michigan

Dear Ms. Fry,

I would like to take this opportunity to participate in the community comments you are soliciting for the 5-year review of the above referenced site. Due to health reasons I will be unable to attend the interview process that you will be conducting next week in St. Louis, Michigan. The following summarizes my comments on the past five years as well as reflections of the past and expectations for the future at the site. Some of these comments you may recognize from the Pine River Superfund Citizens Task Force response to the recent Remedial Investigation (RI) report.

- The EPA discovered that the City of St. Louis' public drinking water was contaminated by pCBA in 2004. The EPA failed to share this information with the City of St. Louis or the Michigan Department of Environmental Quality for one year. The EPA essentially lied to the public during this year as it was understood that EPA was testing the public water supply and would relay any contamination detected. To wait to confirm is understandable, to hide the fact that the public water supply is contaminated for a year is indefensible.
- The Pine River Superfund Citizens Task Force was unaware that since 2003 groundwater was being skimmed off of the top of NAPL collected in the NAPL collection trench and added to the equalization basin until this information appeared in the Review of Final 2005 Clean-up Status Report, Phase 2 Remedial Action prepared by CH2MHill dated October 2006. During 2005 groundwater samples were collected from the three NAPL collection trench manholes "for the purpose of determining if the onsite water treatment plant could treat undiluted groundwater from the manholes (groundwater from the manholes had been treated previously during 2003 and 2004, but it had been greatly diluted with river water)." Notable results included estimated concentrations of mercury and DDT and volatile organic compounds. The highly toxic male sterilent, 1, 2-dibromo-3-chloropropane was found at estimated concentrations of 51.8 parts per billion! This water was being skimmed-off of a hazardous waste, diluted with river water and put through the on-site treatment system. The on-site treatment system was

not designed to handle this waste stream and as stated in the cited report could not be directly pumped to the treatment without the dilution of river water. The EPA in response to a letter I sent to the MDEQ questioning this action, simply stated they were not required to be permitted for the discharge and considered it that same as treating river water. No industry would be allowed to handle their waste stream in this manner.

- As noted in the RI, no wells were installed in the till or lower outwash unit in the northeast portion of the site where contamination is expected to be the highest (it is understood that this was to prevent creating a conduit for contaminants). Additionally, wells were not screened in many instances to detect the presence of NAPL. If NAPL were present the concentration of contaminants would be much higher than detected in the dissolved phase. Therefore the relative risk associated with groundwater at the site has not been fully evaluated, particularly the risk associated with the potable use of deep groundwater.
- The Human Health Risk Assessment included in the RI fails to recognize maternal body burden and the human fetus as necessary components AND fails to identify the risks of the synergistic affect of the cocktail of chemicals found at the site. These are BIG and FUNDAMENTAL criticisms of EPA's methods. Because the human health risk assessment model used in the RI does not recognize maternal body burden, the human fetus or the synergistic effects of contaminants it is an inadequate model upon which to base potential remediation strategies.
- The EPA is currently developing a feasibility study. I question how this can be completed when the ecological assessment of 20-30 miles of the river has not been done. Additionally, there is no recent information regarding the nature and conditions of five off -site deep wells (Breckenridge Radioactive site, Velsicol Well No. 2, two wells on Wells Road and one on State Road). These wells strongly should be considered potential sources of contamination and investigation at these wells is warranted.
- The future ability to use the aquifers hydraulically connected to the Former Plant Site and Burn Area is very questionable. The contaminants continue to leak into the aquifer and the river. The RI states that the NAPL moves faster than water through the slurry wall. When the NAPL interception trench was installed as a temporary interim measure, I questioned the CH2MHILL representative if he had ever known of a site where an interceptor trench had effectively captured escaping contaminants and the response was roughly "don't you want to be the first?" It is important to emphasize the following comment in the RI "Currently, the effectiveness of the NAPL collection trench and high-density polyethylene (HDPE)/clay barrier is unknown; therefore, it is impossible to say with certainty that NAPL is not entering the river." Given the complex glacial geology at the site and the different phases of contaminants in groundwater (DNALP, LNAPL and dissolved) it would be virtually impossible to reverse the downward gradient of the contaminants by groundwater pumping. The MDEQ agrees with this

position. CH2MHill asserts that reversal of groundwater flow direction can be done, however they are not an independent entity and would gain financially by drawing out remediation activities for as long as possible.

- It has been proven that a containment system with no bottom liner has not and cannot contain the contaminants at the site and therefore containment should be eliminated as a viable remediation alternative. It is imperative that the source of contamination, the shallow outwash unit, be removed as part of the final remediation process to prevent the migration of contaminants into the drinking water aquifer for the City of St. Louis and the Pine River. Any alternative remedial action that allows leaving the source material in place (regardless of cap or slurry wall repair or pump and treat systems) or expansion of the waste site is unacceptable, shortsighted and abominable. Such a remedial action would be reminiscent of the corrupt actions taken in the 1980s. As Hugh Kaufman, assistant to the director of EPA's Division of Hazardous Site Control at the time of the Velsicol settlement said back in 1982 "[T]he action today sent out a 'clear signal' that companies that improperly dispose of hazardous wastes could negotiate with the agency at the last minute and wind up paying only administrative costs." Following this statement Mr. Kaufman nearly lost his job in a corrupt system that brings to mind the current Joseph Wilson/Valere Plame-Wilson scandal. The emperor has no clothes - capping the contamination and leaving hazardous waste in unlined glacial till is what has resulted in the current multimillion dollar remediation. It is not anticipated that remediation costs will decrease in the future nor given the dire state of the Michigan economy is it foreseeable that the State of Michigan will have monies to address the contamination at this site once EPA walks away. This site needs to have a complete and FINAL remedy. Leaving hazardous waste in an unlined landfill, adjacent to a river is unacceptable.
- The Pine River is a public resource subject to the Public Trust Doctrine, and subject to full public use and any remedy needs to adhere to this doctrine. Put simply the general public has the right to swim, wade, boat, etc. in the Pine River and eat the fish without being exposed to contaminants. Therefore, the remedy selected needs to ensure such an outcome.

Thank you for consideration of my comments.

Sincerely,

[REDACTED]

## Velsicol Chemical 5 Year Review – Public Interviews

Date 5-15-07

Name

[REDACTED]

(Please Print)

Address

[REDACTED]

[REDACTED]

Telephone Number

\_\_\_\_\_

Alternate Number

\_\_\_\_\_

If we need to contact you, what is the best way?

\_\_\_\_\_

Using your own words.

1. How does the site impact you and your family?
2. What are your concerns or fears about the site?
3. Is the EPA and/or the Michigan doing the right thing in St. Louis?  
If not, what can we do better?
4. What is your vision of the site 5 or 10 years from now?
5. How do you get current site information?
6. Have you used the site information in the public library?
7. Do you think this EPA/DEQ team is truthful?
8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?  
Comments.
9. Where do you get most of your local (non-site) information?
10. How can we get site information to you and the public better?

What do you want us to know? (any subject)

[ATTACHED]

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

[REDACTED]

Don't think the Clean up did much Good with the Foundation  
still leaking. And All the Ground that got contaminated  
around the Plant, we are just North of the River, from the old Plant.  
Back in the 70's, you would have a white Chemical Dust on our yards.  
in the Morning's. So I think that contaminated our yard.  
And today Because of the Water Supply is Bad. we buy Water To  
Drink, Cost About \$10. per Week, I Have enough Health problems  
Today, with taking a Chance on drinking St. Louis Water!

## **IMPORTANT PUBLIC EVENT**

**TUESDAY, MAY 15**

**ST. LOUIS PUBLIC LIBRARY**

**2-4 p.m. or 6-8 p.m.**

Staff members of the U.S. Environmental Protection Agency need to hear from the people in our community. Can you please give a few minutes that may help restore our local environment and protect it for our children?

As you probably know, our county has a highly contaminated Superfund Site that resulted from dumping by the old Michigan Chemical Company, later known as Velsicol Chemical located on the Pine River on M-46 in St. Louis.

For the past decade, the U.S. Environmental Protection Agency (EPA) has been removing contaminants from the Pine River next to the former chemical plant site. Later this year, the EPA will make a determination of how to remediate the land where thousands of tons of contaminants are buried at the old plant site. These contaminants are leaking into the river, the groundwater, and some of them have reached the St. Louis drinking water wells.

At this time the EPA is conducting a 5-year review to determine how effective their past work has been in containing the contaminants. They want to hear what ordinary citizens have to say on this issue.

You are urged to stop in to tell them your opinion or to hand it to them written out. No more than a minute or two of your time is necessary. In this case, it is the number of people who comment more than how long they speak that matters.

The St. Louis Public Library is located at 312 Michigan Avenue.

Both the city of St. Louis and the Pine River Superfund Citizen Task Force are in favor of a full removal and complete clean-up of the former chemical plant site.

Please make a quick stop on Tuesday, May 15 between the hours mentioned above to speak your views on the importance of cleaning up the contaminants in our community.

Once you finish speaking your opinion, you are free to leave. **THIS IS NOT A MEETING.**

Free lapel buttons will be given to participants.

# Velsicol Chemical 5 Year Review – Public Interviews

Date MAY 15, 2007

Name

(Please Print)

Address

Telephone Number

Alternate Number

If we need to contact you, what is the best way? CELL PHONE

Using your own words.

1. How does the site impact you and your family?

*I live across the river from the site*

2. What are your concerns or fears about the site?

*The river has been cleaned - somewhat but the site is leaching more poison into the river*

3. Is the EPA and/or the Michigan doing the right thing in St. Louis?

If not, what can we do better? *No. haul all of the site away.*

4. What is your vision of the site 5 or 10 years from now?

5. How do you get current site information?

6. Have you used the site information in the public library?

7. Do you think this EPA/DEQ team is truthful?

*No - cause confusion*

8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?

Comments. *Questionable*

9. Where do you get most of your local (non-site) information?

10. How can we get site information to you and the public better?

What do you want us to know? (any subject)

*I was on the council 50 yrs ago for 10 yrs. we complained then & got no action. Why should we expect any now. I was also Mayor for 3 of the 10.*

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

## Velsicol Chemical 5 Year Review – Public Interviews

Date May 15, 2007

Name \_\_\_\_\_

(Please Print)

Address \_\_\_\_\_

Telephone Number \_\_\_\_\_

Alternate Number \_\_\_\_\_

If we need to contact you, what is the best way? telephone

Using your own words.

1. How does the site impact you and your family?

water pollution

2. What are your concerns or fears about the site?

continued pollution

3. Is the EPA and/or the Michigan doing the right thing in St. Louis?

If not, what can we do better?

Haul the chemical site dirt away.

4. What is your vision of the site 5 or 10 years from now?

maybe a park or a lake

5. How do you get current site information?

newspaper

6. Have you used the site information in the public library?

no

7. Do you think this EPA/DEQ team is truthful?

8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?

Comments.

9. Where do you get most of your local (non-site) information?

newspaper

10. How can we get site information to you and the public better?

What do you want us to know? (any subject)

when they will finish cleaning up the site.

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

# Velsicol Chemical 5 Year Review – Public Interviews

Date 5/15/07

Name

(Please Print)

Address

Telephone Number

Alternate Number

If we need to contact you, what is the best way? cell phone

## Using your own words.

### 1. How does the site impact you and your family?

It negatively impacts our economy. we should have a beautiful tourist attraction in the river & recreation, instead we have a toxic stone. It negatively impacts our health. People should be able to fish & consume their catch from the river & they can't while the site is leaking.

### 2. What are your concerns or fears about the site?

that it will be capped & not removed and the chemicals will find a way to continue contaminating the river. It inspires fear of something that should be beautiful & it inspires mistrust in the gov't that lays down laws concerning toxic waste & the guilty party still gets let off the hook with nothing more than a slap on the wrist.

### 3. Is the EPA and/or the Michigan doing the right thing in St. Louis?

If not, what can we do better? It is good that the EPA & Michigan is cleaning up the site but it must be total full removal or it's like you wiped an infected wound with a topical anesthetic: the wound will only get worse faster.

### 4. What is your vision of the site 5 or 10 years from now?

In five years the toxins should be fully removed and in its place, there could be a park or lake planned.

### 5. How do you get current site information?

I get information from Murray Borrello, Ed Lorenz, Jane Keon, EPA website

### 6. Have you used the site information in the public library?

Not yet.

### 7. Do you think this EPA/DEQ team is truthful?

I think they want to help, but it's much easier to say your hands are tied by budget or lack of scientific evidence when you don't live here and you have so many sites to deal with.

### 8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?

Comments. Individual members are trustworthy but the overall process is not trustworthy. There is too much red tape. We don't want another massive cattle kill or equivalent disaster - because the EPA didn't see bodies bleeding.

### 9. Where do you get most of your local (non-site) information?

CAG, George Kubin, The Morning Sun

### 10. How can we get site information to you and the public better?

Interpret Translate technical information, site narratives and jargon into terms that are easily understood by the general public. They need to know how discoveries impact them. They need to know how the site may have & will affect them.

### What do you want us to know? (any subject)

There are still people who believe there is no problem with the river, & you have the data, so you need to publish it in the newspaper, post signs that do more than state they are toxic to consume. Translate your website to be more user-friendly for the average citizen w/ links for the technically savvy.

Our groundwater is at risk, our image is shot, and most of us have no idea how many toxins are in our bodies. we need a study to tell us that.

← regardless of anything else, a toxic dump site should never be positioned beside moving water.

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

web site - too wordy  
- too complicated

communication - long, too technical -

# Velsicol Chemical 5 Year Review – Public Interviews

Date May 15, 2007

Name [REDACTED]

(Please Print)

Address [REDACTED]

Telephone Number [REDACTED]

Alternate Number [REDACTED]

If we need to contact you, what is the best way? cell or leave message & do so we can call back.

Using your own words.

- property value*
1. How does the site impact you and your family? *We have nasty water to drink, makes our town undesirable, which makes*
  2. What are your concerns or fears about the site? *It's going to kill us*
  3. Is the EPA and/or the Michigan doing the right thing in St. Louis? *NO!*  
If not, what can we do better? *Get rid of all of the contamination.*
  4. What is your vision of the site 5 or 10 years from now? *A nice green, healthy park to walk in. (would like to see Lake St. Louis there so*
  5. How do you get current site information?  
*see Lake St. Louis there so*
  6. Have you used the site information in the public library?  
*no*
  7. Do you think this EPA/DEQ team is truthful?
  8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?  
*no / Sugarcoast statements not telling truth state*
  9. Where do you get most of your local (non-site) information? *CAG / Newspaper*
  10. How can we get site information to you and the public better?  
*email → 60%-75% could*

*Why buying contaminated with*

What do you want us to know? (any subject)

*EPA to release information quickly.*

*lake St. Louis →*

*No site for input during initial year down*

*into a hard to find etc.*

Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

2 Q w/o spoken —

2 generations —

## Velsicol Chemical 5 Year Review – Public Interviews

Date \_\_\_\_\_

Name \_\_\_\_\_

(Please Print)

Address \_\_\_\_\_

Telephone Number \_\_\_\_\_

Alternate Number \_\_\_\_\_

If we need to contact you, what is the best way? \_\_\_\_\_

### Using your own words.

1. How does the site impact you and your family?
2. What are your concerns or fears about the site?
3. Is the EPA and/or the Michigan doing the right thing in St. Louis?  
If not, what can we do better?
4. What is your vision of the site 5 or 10 years from now?
5. How do you get current site information?
6. Have you used the site information in the public library?
7. Do you think this EPA/DEQ team is truthful?
8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?  
Comments.
9. Where do you get most of your local (non-site) information?
10. How can we get site information to you and the public better?

What do you want us to know? (any subject)

*To VAP removal of contaminants.*

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

## Velsicol Chemical 5 Year Review – Public Interviews

Date 5/15/07

Name

(Please Print)

Address

Telephone Number

Alternate Number

If we need to contact you, what is the best way? PHONE, OR EMAIL

Using your own words.

1. How does the site impact you and your family? IMPACTS MY ABILITY TO EARN AN INCOME. MY BUSINESS DEPENDS ON THE RIVER, ITS CONDITION + ITS PERCEPTION
2. What are your concerns or fears about the site? by THE PUBLIC AS A WHOLE, THAT IT WILL NOT BE 100% REMOVED + WILL EVENTUALLY DESTROY THE COMMUNITY
3. Is the EPA and/or the Michigan doing the right thing in St. Louis?  
If not, what can we do better? IF THE SITE IS COMPLETELY HAULED AWAY + TURNED INTO A LAKE FOR EXAMPLE... THE RIGHT THING WILL HAVE BEEN DONE.
4. What is your vision of the site 5 or 10 years from now?  
GONE + FISHING + SWIMMING IN ITS PLACE
5. How do you get current site information?  
CAG, THE NEWS MEDIA, THE INTERNET.
6. Have you used the site information in the public library?  
NO.
7. Do you think this EPA/DEQ team is truthful?  
AS BEST THEY CAN BE AS THEY HAVE SUPERIORS TO ANSWER TO
8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?  
Comments. I BELIEVE THEY HAVE THEIR OWN AGENDA + POLITICS AND NOT WHAT MAY BE OR IS BEST FOR THE CITIZENS OF GRATIOT CO.
9. Where do you get most of your local (non-site) information?  
PLEASE SEE #5
10. How can we get site information to you and the public better?  
UNKNOWN BY ME

What do you want us to know? (any subject)

PLEASE SEE ATTACHED

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

Hello to all of you members of this panel.

-I'm [REDACTED] I'm a Gratiot County Commissioner representing the people of District 3, covering one half of St Louis and one half of Alma.

-I also make my living having established and operating a paddle sport business on the Pine River in the city St. Louis. My livelihood, putting food on my table, depend on the health of the Pine River, and the environmental, and physical health of this entire area.

-Perhaps most importantly, I stand here before you as a concerned citizen.

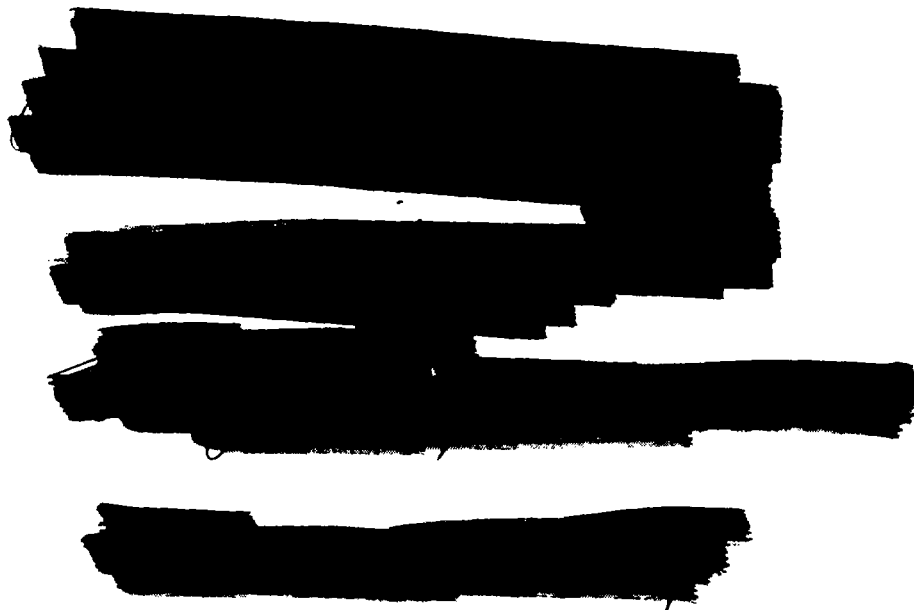
-Short of demanding, I am here to urge you as strongly as I possibly can, for a complete and total removal of all contamination at the old Velsicol plant site.

-As you go through this decision making process, please consider these thoughts. Consider the countless man hours, and the millions of dollars already wasted and an even more severely damaged environment. Please also consider the saddest of all, the human toll of illness, deformity, and death directly related to those toxins, the extent of which we will never know. It is glaringly clear the decisions made by those before you, in their attempt to contain these deadly toxins <sup>WERE</sup> ~~was~~ ~~a~~ wrong, ~~one~~. Those before you, faced with the same choices and decisions you are now facing, may have believed, and undoubtedly assured the citizens of St Louis, the Saginaw Bay Watershed, and the State of Michigan, that capping and containing would solve the problem. IT DID NOT, and here we are again!

-Had the Velsicol site originally been cleared with 100% toxin removal, further tragedies related to this site could, and would have been avoided. We would not be here today, forced with making these critical decisions.

If we do not heed, and learn from history, we are fools. Do right by history, do right by the citizens of St Louis, now and for generations to come; do right that no one will ever have to deal with this site and it's toxins again, and most importantly....do right by yourself....

**do a complete site removal, it is the only RIGHT choice.**



Clean it up!  
100% Thanks.



## Velsicol Chemical 5 Year Review – Public Interviews

Date \_\_\_\_\_

Name \_\_\_\_\_

(Please Print)

Address \_\_\_\_\_

Telephone Number \_\_\_\_\_

Alternate Number \_\_\_\_\_

If we need to contact you, what is the best way? \_\_\_\_\_

Using your own words.

1. How does the site impact you and your family?

water quality  
side. Clean up

2. What are your concerns or fears about the site?

3. Is the EPA and/or the Michigan doing the right thing in St. Louis?

If not, what can we do better?

Clear Remediation

4. What is your vision of the site 5 or 10 years from now?

5. How do you get current site information?

down one  
to downtown  
in sep

6. Have you used the site information in the public library?

7. Do you think this EPA/DEQ team is truthful?

mostly -

8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?

Comments.

mostly yes.

9. Where do you get most of your local (non-site) information?

best results.

10. How can we get site information to you and the public better?

What do you want us to know? (any subject)

Reuse - low impact. -

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

We live across the street from the old  
Chemical plant and we would like to see the property  
completely cleaned up.

[REDACTED]

[REDACTED]  
[REDACTED]

2

## Velsicol Chemical 5 Year Review – Public Interviews

Date \_\_\_\_\_  
Name \_\_\_\_\_  
(Please Print)  
Address \_\_\_\_\_  
\_\_\_\_\_

Telephone Number \_\_\_\_\_  
Alternate Number \_\_\_\_\_  
If we need to contact you, what is the best way? \_\_\_\_\_

Using your own words.

1. How does the site impact you and your family?

Low Choral impact  
drinking H<sub>2</sub>O from the

2. What are your concerns or fears about the site?

redaction real estate value  
health

3. Is the EPA and/or the Michigan doing the right thing in St. Louis?  
If not, what can we do better?

4. What is your vision of the site 5 or 10 years from now?

5. How do you get current site information?

completely clean

6. Have you used the site information in the public library?

7. Do you think this EPA/DEQ team is truthful?

yes, hands-on  
Deficient

8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?  
Comments.

9. Where do you get most of your local (non-site) information?

10. How can we get site information to you and the public better?

What do you want us to know? (any subject)

clean it up

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

5/13/77 Possible security problem -  
Alerted CCA leaders -  
RD

## Velsicol Chemical 5 Year Review – Public Interviews

Date 5/15

Name

[REDACTED]

(Please Print)

Address

[REDACTED]

Telephone Number

[REDACTED]

Alternate Number

If we need to contact you, what is the best way? PHONE

Using your own words.

1. How does the site impact you and your family?

TOXIC

2. What are your concerns or fears about the site?

TOXIC

3. Is the EPA and/or the Michigan doing the right thing in St. Louis?

If not, what can we do better?

NO

4. What is your vision of the site 5 or 10 years from now?

NO CHANGE

5. How do you get current site information?

THERE IS NONE

6. Have you used the site information in the public library?

7. Do you think this EPA/DEQ team is truthful?

HELL NO!

8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?

Comments.

HELL NO

9. Where do you get most of your local (non-site) information?

I LIVE HERE

10. How can we get site information to you and the public better?

What do you want us to know? (any subject)

(EPA)  
Government has signed at this town

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

# Velsicol Chemical 5 Year Review - Public Interviews

Date 5-15-07

Name \_\_\_\_\_

(Please Print)

Address \_\_\_\_\_

Telephone Number \_\_\_\_\_

Alternate Number \_\_\_\_\_

If we need to contact you, what is the best way? phone in pm

Using your own words.

1. How does the site impact you and your family?

2. What are your concerns or fears about the site?

3. Is the EPA and/or the Michigan doing the right thing in St. Louis?  
If not, what can we do better?

4. What is your vision of the site 5 or 10 years from now?

5. How do you get current site information?

6. Have you used the site information in the public library?

7. Do you think this EPA/DEQ team is truthful?

8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?  
Comments.

9. Where do you get most of your local (non-site) information?

10. How can we get site information to you and the public better?

What do you want us to know? (any subject)

dig all extent out -

econ. impact / now  
business

improvement

Psychological impact

\$

Morning Sun

city dept e-mail

All tests done -  
city H<sub>2</sub>O - safe -

Council on Prob.

Public library  
at School

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

## Velsicol Chemical 5 Year Review – Public Interviews

Date 5-15-07

Name \_\_\_\_\_ *uk*

(Please Print)

Address \_\_\_\_\_

Telephone Number \_\_\_\_\_ *(wk)*

Alternate Number \_\_\_\_\_

If we need to contact you, what is the best way? phone or email

Using your own words.

1. How does the site impact you and your family?
2. What are your concerns or fears about the site?
3. Is the EPA and/or the Michigan doing the right thing in St. Louis?  
If not, what can we do better?
4. What is your vision of the site 5 or 10 years from now?
5. How do you get current site information?
6. Have you used the site information in the public library?
7. Do you think this EPA/DEQ team is truthful?
8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?  
Comments.
9. Where do you get most of your local (non-site) information?
10. How can we get site information to you and the public better?

e-mail

What do you want us to know? (any subject)

*— complete removal —*

*design of rem-d. - failure?*

*Comments by  
Vicki Oehl*

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

## Velsicol Chemical 5 Year Review – Public Interviews

Date May 15, 2007

Name \_\_\_\_\_

(Please Print)

Address \_\_\_\_\_

Telephone Number \_\_\_\_\_

Alternate Number \_\_\_\_\_

If we need to contact you, what is the best way? phone

### Using your own words.

1. How does the site impact you and your family? The land is not usable, the water & river contaminated, is it affecting our health? our H<sub>2</sub>O?
2. What are your concerns or fears about the site? contaminated H<sub>2</sub>O, health issues
3. Is the EPA and/or the Michigan doing the right thing in St. Louis? We are a small, rural town of great people. We need to be assured of clean land and H<sub>2</sub>O. CLEAN IT UP!
4. What is your vision of the site 5 or 10 years from now? Fish w/o tumors, clean, safe H<sub>2</sub>O that can be used recreationally, land that can be used for any person.
5. How do you get current site information? Newspaper
6. Have you used the site information in the public library? no

7. Do you think this EPA/DEQ team is truthful? I believe that most people who work for govt agencies are truthful, credible and trustworthy. I do believe, however, govt employees are heavily influenced by the political party in control and their priorities
  8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy? per my int control
- Comments.

9. Where do you get most of your local (non-site) information? Newspaper, TV, radio

10. How can we get site information to you and the public better?

waterways — Rec.  
Reuse — Park — general purpose

What do you want us to know? (any subject)

Just clean up the site!

Digging up cont. soils —

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

## Velsicol Chemical 5 Year Review – Public Interviews

Date May 15, 2007

Name \_\_\_\_\_

(Please Print)

Address \_\_\_\_\_

Telephone Number \_\_\_\_\_

Alternate Number \_\_\_\_\_

If we need to contact you, what is the best way? \_\_\_\_\_

Using your own words.

1. How does the site impact you and your family? *I lived downstream from the chemical plant for 29 years.*

2. What are your concerns or fears about the site?

3. Is the EPA and/or the Michigan doing the right thing in St. Louis?  
If not, what can we do better?

4. What is your vision of the site 5 or 10 years from now?

5. How do you get current site information?

6. Have you used the site information in the public library?

7. Do you think this EPA/DEQ team is truthful?

8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?  
Comments.

9. Where do you get most of your local (non-site) information?

10. How can we get site information to you and the public better?

What do you want us to know? (any subject)

*See the attached typed statement*

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

May 15, 2007

My personal Statement for the EPA 5-year review of the Superfund site in St. Louis, Michigan:

It's time to do the right thing.

The time has come for the men and women working for EPA, the men and women working for DEQ and the people living in the St. Louis area to insist that the right thing be done and to see it through to the finish.


The wrong thing was done in the last remediation. It was wrong to allow Velsicol to leave town without dredging the river. It was wrong to allow them to haul contaminated sediment and debris to the plant site for burial. It was wrong to allow Velsicol to oversee their own clean-up and it was wrong for EPA and DEQ to accept the data Velsicol produced without double-checking it. It was wrong for the state and federal legislators to favor a corporation with a settlement that violated the very lives of the people they were elected to protect.

And it was wrong for the people of St. Louis to give up fighting for a clean-up of their community. It was wrong for them accept the verbal, emotional and physical abuse dished out by Velsicol, EPA, DEQ and public opinion. It was wrong for them — for us — to fail to stand up for what was right. It was wrong for us to lapse into despair. It was wrong for us to believe that things would never get better.

The time has come for each individual working for EPA, DEQ, DOJ, and Congress to insist that the right thing be done. Not just the agencies and bureaucracies, but the people who are working in those agencies and bureaucracies must insist that the right thing be done. The individuals working for these agencies must rise up in indignation when “remedies” are suggested that insult and demean the people who live in this area.

The people living here will no longer accept psychological mind games that government agencies offer, such as calling a cover up a “clean up,” or calling everlasting maintenance “remediation.” The people living here have overcome their despair. They are prepared to hold accountable those agencies that showed favor to a soulless corporation in the 1982 settlement with Velsicol. They are prepared to fight to the finish to have the right thing done once and for all.

They know — we know — we are right, and that the time has come to do the right thing.



May 15, 2007

Statement for the EPA 5-year review of the Superfund site in St. Louis, Michigan:

It's time to do the right thing.

The time has come for the men and women working for EPA, the men and women working for DEQ and the people living in the St. Louis area to insist that the right thing be done and to see it through to the finish.


The wrong thing was done in the last remediation. It was wrong to allow Velsicol to leave town without dredging the river. It was wrong to allow them to haul contaminated sediment and debris to the plant site for burial. It was wrong to allow Velsicol to oversee their own clean-up and it was wrong for EPA and DEQ to accept the data Velsicol produced without double-checking it. It was wrong for the state and federal legislators to favor a corporation with a settlement that violated the very lives of the people they were elected to protect.

And it was wrong for the people of St. Louis to give up fighting for a clean-up of their community. It was wrong for them accept the verbal, emotional and physical abuse dished out by Velsicol, EPA, DEQ and public opinion. It was wrong for them — for us — to fail to stand up for what was right. It was wrong for us to lapse into despair. It was wrong for us to believe that things would never get better.

The time has come for each individual working for EPA, DEQ, DOJ, and Congress to insist that the right thing be done. Not just the agencies and bureaucracies, but the people who are working in those agencies and bureaucracies must insist that the right thing be done. The individuals working for these agencies must rise up in indignation when "remedies" are suggested that insult and demean the people who live in this area.

The people living here will no longer accept psychological mind games that government agencies offer, such as calling a cover up a "clean up," or calling everlasting maintenance "remediation." The people living here have overcome their despair. They are prepared to hold accountable those agencies that showed favor to a soulless corporation in the 1982 settlement with Velsicol. They are prepared to fight to the finish to have the right thing done once and for all.

They know — we know — we are right, and that the time has come to do the right thing.



# Velsicol Chemical 5 Year Review – Public Interviews

Date May 15, 2007

Name \_\_\_\_\_

Address \_\_\_\_\_

Telephone Number \_\_\_\_\_

Alternate Number \_\_\_\_\_

If we need to contact you, what is the best way? Phone or Mail

Using your own words.

1. How does the site impact you and your family? My dad and I live down river.
2. What are your concerns or fears about the site?  
Down river H<sub>2</sub>O quality
3. Is the EPA and/or the Michigan doing the right thing in St. Louis?  
If not, what can we do better?
4. What is your vision of the site 5 or 10 years from now?
5. How do you get current site information?
6. Have you used the site information in the public library?
7. Do you think this EPA/DEQ team is truthful?
8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?  
Comments.
9. Where do you get most of your local (non-site) information? Newspapers, word of mouth,
10. How can we get site information to you and the public better?

Enjoy River  
What do you want us to know? (any subject)

Or animal on site

→ Summer deer hunt - St. Louis "Fun Days" ?

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

# Velsicol Chemical 5 Year Review – Public Interviews

Date 5-15-07

Name

Address

Telephone Number

Alternate Number

If we need to contact you, what is the best way?

(Please Print)

@hotmail.com

## Using your own words.

1. How does the site impact you and your family? it threatens our safety on a daily basis

2. What are your concerns or fears about the site?

chemicals in our water supply

3. Is the EPA and/or the Michigan doing the right thing in St. Louis? So far  
If not, what can we do better?

complete removal and clean up at the plant site

4. What is your vision of the site 5 or 10 years from now?

condos or home sites on the river

5. How do you get current site information?

CAG meetings, City Council

6. Have you used the site information in the public library?

NO

7. Do you think this EPA/DEQ team is truthful? I think we are told what you ~~they~~ want us to know.

8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?

Comments. Not fully too much concern about cost not enough about safety

9. Where do you get most of your local (non-site) information?

internet

10. How can we get site information to you and the public better?

doing a good job supplying information

What do you want us to know? (any subject)

The river only cleans up about 20% of the chemical threat.

The river clean up was good except for the DNAPL trench that was to be temporary in nature

10/14/07

> St. Louis web page

critique 50% internet

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

## Velsicol Chemical 5 Year Review – Public Interviews

Date 5-15-07

Name

(Please Print)

Address

Telephone Number

Alternate Number

If we need to contact you, what is the best way? Phone

Formerly

Using your own words.

1. How does the site impact you and your family?

2. What are your concerns or fears about the site?

3. Is the EPA and/or the Michigan doing the right thing in St. Louis?

If not, what can we do better? *So far, yes. Now clean out the site*

4. What is your vision of the site 5 or 10 years from now?

5. How do you get current site information?

6. Have you used the site information in the public library?

7. Do you think this EPA/DEQ team is truthful?

8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?

Comments.

9. Where do you get most of your local (non-site) information?

10. How can we get site information to you and the public better?

What do you want us to know? (any subject)

[ATTACHED]

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_


## **Statement to EPA and DEQ**

I am sorry to say that I believe that the EPA and DEQ and whoever else is involved in making the decision about the future of the Chemical Site in St. Louis have overlooked the most important issue – that of the effects on the health (born and unborn) in the community.

You seem to think that as long as it's covered up and people are no longer in contact with the chemicals that are buried, it isn't a health issue. You choose to ignore the leaking liner and the mix of chemicals that are finding their way into the sand seams and the water source of the community. Even if you put a new liner in the site the 100 odd chemicals (organic and inorganic) will eat its way through and once again you will have the same issue to deal with down the road with a much higher price tag.

You choose to ignore the young people who have died before their time from the community of rare cancers especially for the young. You choose to ignore the unusually high rate of miscarriages and the malformed babies that have broken their families both emotionally and financially. You choose to overlook the concerns of Dr. Fred Brown about the amount of these chemicals in the residents body fat and its effects upon the unborn.

This site is a cesspool of chemicals when mixed prove even more dangerous to the community. The site needs to be dug up and removed from its proximity to the river. ~~The~~ the people of St. Louis need to have this cross that they have carried for over half a century lifted from their shoulders. It is your responsibility to take an active role to see that this is done.



## Velsicol Chemical 5 Year Review – Public Interviews

Date 5/15/07

Name [REDACTED]  
(Please Print)

Address [REDACTED]

Telephone Number [REDACTED]  
Alternate Number [REDACTED]

If we need to contact you, what is the best way? [REDACTED]

*see attached form*

Using your own words.

1. How does the site impact you and your family?
2. What are your concerns or fears about the site?
3. Is the EPA and/or the Michigan doing the right thing in St. Louis?  
If not, what can we do better?
4. What is your vision of the site 5 or 10 years from now?
5. How do you get current site information?
6. Have you used the site information in the public library?
7. Do you think this EPA/DEQ team is truthful?
8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?  
Comments.
9. Where do you get most of your local (non-site) information?
10. How can we get site information to you and the public better?

What do you want us to know? (any subject)

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

**Velsicol Chemical 5 Year Review – Publ**

Date 5/15/07

Name: [REDACTED]

Address: [REDACTED]

Telephone Number [REDACTED]  
Alternate Number [REDACTED]

If we need to contact you, what is the best way? email – [REDACTED]

Office: [REDACTED]  
Home: [REDACTED]  
Fax: [REDACTED]  
[REDACTED]**1. How does the site impact you and your family?**

The problem with this question is none of us in the region know the impact of contaminants dumped at the site from 1935-1978 and leaching into the ground water. The major concern with exposure is with consuming contaminated water; however, all families with children (we have six and now five grand children, is the loss of the opportunity to fish in the river). Everyone in the region has suffered a loss of use of a public natural resource for more than a third of a century.

**2. What are your concerns or fears about the site?**

The immediate concern is the impact upon the ground water of contaminants remaining at the site. We know that no one knows the process of NAPL and DNAPL creation and migration and we know there are NAPL and DNAPL migrating from the plant site and the "burn pit." The detection of pcbsa in the St. Louis water is a troubling warning of a problem about which we know too little. Have contaminants been in the water supplies of the region and private wells for decades or are they just arriving at well heads? No one knows the answer. Since more contaminants were dumped in the 1930s, 1940s, 1950s and 1960s than in the period after 1970, we'd presume contaminants were in the water in earlier eras and consumed. What is the impact of such contaminants upon child and maternal health and health generally?

**3. Is the EPA and/or the Michigan [DEQ] doing the right thing in St. Louis?**

We fully support the river sediment remediation; the challenge is to complete the job begun well and prevent recontamination of the river and the regions ground water.

**4. What is your vision of the site 5 or 10 years from now?**

The plant site is clean, the fence is down, the tombstone is in the historical museum, and the river fishing ban is removed.

**5. How do you get current site information?**

By attending monthly CAG meetings and also by independent research.

**6. Have you used the site information in the public library?**

Yes.

**7. Do you think the EPA/DEQ team is truthful?**

While I respect members of the team, I believe our national and state budget crises, especially the foolish abandonment of the dedicated superfund tax, forces EPA and DEQ staff to favor cheap solutions and to interpret information incorrectly.

**8. Do you feel the EPA and/or Michigan DEQ is credible or trustworthy?**

As I said in 7., I think the budget crises engineered by opponents of effective government regulation over the last quarter century forces EPA and DEQ staff to deceptive practices in reports on the site and other sites nationally. Further, I think we are doing a poor job with community involvement, undermining progress initially made in the mid-1990s.

There has been a long term problem with how "experts" relate to citizens, dismissing the wisdom of local citizens who know much about the local history of contamination and the environment generally. I would urge EPA and DEQ to read books such as Frank Fischer, *Citizens, Experts, and the Environment: The Politics of Local Knowledge* (Durham: Duke Univ. Press, 2000).

I would also urge officials to become familiar with the history of this site and the failure of EPA and the state in the 1970s and 1980s to make good decisions, free of corruption. The problems along the Pine River grow from cheap and wrong decisions made under the influence of officials hired away from regulatory agencies by Velsicol to negotiate with their former associates. The process worked for Velsicol but not for the environment. When people warned regulators of the mistakes being made they were intimidated or ignored. Many in the local community, therefore, have no sympathy for the budget problems at EPA and DEQ that now inhibit good decision making about the site.

**9. Where do you get most of your local (non-site) information?**

The *Morning Sun* and *Gratiot County Herald* newspapers.

**10. How can we get site information to you and the public better?**

It would help if EPA officials came to us and admitted the 1982 settlement was flawed and they are committed to making it right and showing full respect for local knowledge and concerns.

### **What do you want us to know?**

Related to 10., I think a good start would be for EPA to admit how little we know about what is happening at the plant site, especially with the NAPL and the potential problems with groundwater contamination. As I wrote this I checked randomly documents about NAPL. None showed much confidence in current knowledge about its formation and behavior. The first I checked, prepared by the Interstate Technology and Regulatory Council, Dense Nonaqueous Phase Liquids Team entitled *DNAPL Source Reduction: Facing the Challenge* [2002] concluded [p. 23] "While the long-term impacts of aggressive DNAPL source reduction are the subject of debate and can only be hypothesized at present, the potential rewards (e.g., improvements in groundwater quality and lower life-cycle costs) are worthy of pursuit. Studies should be designed to test the hypothesis, through cost-benefit analyses and long-term monitoring and modeling, that removing DNAPL source material does indeed result in a decrease in contaminant mass loading to the down gradient plume, shorter remedial time frames, and less overall cost." As with so much information about the site, I believe we need a frank discussion of what we don't know and of the likelihood that the safest course is full removal of contaminants from the plant site.

## Velsicol Chemical 5 Year Review – Public Interviews

Date 5/15

Name [REDACTED]

(Please Print)

Address [REDACTED]

Telephone Number [REDACTED]

Alternate Number [REDACTED]

If we need to contact you, what is the best way? [REDACTED]

### Using your own words.

1. **How does the site impact you and your family?** My kids fish in the Pine River in Alma below the dam/fish from St Louis are free to swim up + down as they wish
2. **What are your concerns or fears about the site?** I worry the contamination from the site will get into the water table below Alma, St Louis, Breckinridge, etc.
3. **Is the EPA and/or the Michigan doing the right thing in St. Louis?**  
**If not, what can we do better?** The EPA was great to clean the river but it won't stay clean in my opinion unless we get rid of the stuff on the site. Many of the contaminants are carcinogens; DDT causes damage to nervous system, etc. That "stuff" should not be so close to houses where children live + play.
4. **What is your vision of the site 5 or 10 years from now?**  
I would like it to be clean
5. **How do you get current site information?**  
from Pine River Citizens Group + from the newspaper
6. **Have you used the site information in the public library?**  
Once
7. **Do you think this EPA/DEQ team is truthful?** I don't know.
8. **Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?** No.  
**Comments.** I think the EPA doesn't want to clean it because it would be expensive. I think the govt. should value people + public health more than money. The govt. should raise taxes. It has the power.
9. **Where do you get most of your local (non-site) information?** newspaper
10. **How can we get site information to you and the public better?**  
We want action, not words.

What do you want us to know? (any subject)

I think if the EPA really cared about hearing our opinions, it would have sent more than one interview team. It's like you want to discourage us because many of us have to go back to work.

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

## Velsicol Chemical 5 Year Review – Public Interviews

Date 5-15-07

Name

(Please Print)

Address

Telephone Number

Alternate Number

If we need to contact you, what is the best way? Phone

Using your own words.

1. How does the site impact you and your family?

2. What are your concerns or fears about the site? Leakage

3. Is the EPA and/or the Michigan doing the right thing in St. Louis?  
If not, what can we do better?

4. What is your vision of the site 5 or 10 years from now?

5. How do you get current site information?

6. Have you used the site information in the public library?

7. Do you think this EPA/DEQ team is truthful? Yes

8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?  
Comments.

9. Where do you get most of your local (non-site) information?

10. How can we get site information to you and the public better?

RADIO / WFLC / WPLM  
What do you want us to know? (any subject)

Remove all environmental

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

# Velsicol Chemical 5 Year Review – Public Interviews

Date 5-15-07

Name [REDACTED]  
(Please Print)

Address [REDACTED]

Telephone Number [REDACTED]  
Alternate Number \_\_\_\_\_

If we need to contact you, what is the best way? phone

Using your own words.

1. How does the site impact you and your family?
2. What are your concerns or fears about the site?
3. Is the EPA and/or the Michigan doing the right thing in St. Louis?  
If not, what can we do better?
4. What is your vision of the site 5 or 10 years from now?
5. How do you get current site information?
6. Have you used the site information in the public library?
7. Do you think this EPA/DEQ team is truthful?
8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?  
Comments.
9. Where do you get most of your local (non-site) information?
10. How can we get site information to you and the public better?

What do you want us to know? (any subject)




Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

This mess has gone on long enough.  
Remediation has failed so far. It is  
time to clean up The 50 acres of slp  
even if it means total excavation.  
Let St. Louis get past This nightmare.  
Now!



## Velsicol Chemical 5 Year Review – Public Interviews

Date 5-15-07

Name

[REDACTED]

(Please Print)

Address

[REDACTED]

Telephone Number

[REDACTED]

Alternate Number

If we need to contact you, what is the best way? \_\_\_\_\_

Using your own words.

1. How does the site impact you and your family?
2. What are your concerns or fears about the site?
3. Is the EPA and/or the Michigan doing the right thing in St. Louis?  
If not, what can we do better?
4. What is your vision of the site 5 or 10 years from now?
5. How do you get current site information?
6. Have you used the site information in the public library?
7. Do you think this EPA/DEQ team is truthful?
8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?  
Comments.
9. Where do you get most of your local (non-site) information?
10. How can we get site information to you and the public better?

What do you want us to know? (any subject)

*Haul away the contamination!*

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

## Velsicol Chemical 5 Year Review – Public Interviews

Date 5-15-07

Name \_\_\_\_\_

(Please Print)

Address \_\_\_\_\_

Telephone Number \_\_\_\_\_

Alternate Number none

If we need to contact you, what is the best way? mail or phone

### Using your own words.

1. How does the site impact you and your family? we live just down the street + see it every day
2. What are your concerns or fears about the site? health concerns - our son had cancer, next door the son had cancer, next door to
3. Is the EPA and/or the Michigan doing the right thing in St. Louis? they died of cancer  
If not, what can we do better? We have lived here for 30 yrs.  
+ it is still being worked on
4. What is your vision of the site 5 or 10 years from now? public park
5. How do you get current site information? Morning Sun newspaper
6. Have you used the site information in the public library? no
7. Do you think this EPA/DEQ team is truthful? no way to know  
I would like to give you the benefit of a doubt
8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?

Comments. no way to know

9. Where do you get most of your local (non-site) information? Morning Sun newspaper

10. How can we get site information to you and the public better?

mail list - letters to homes in area

What do you want us to know? (any subject)

the site needs to be cleaned up  
and used in a useful way  
for our community

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

# Velsicol Chemical 5 Year Review – Public Interviews

Date 5-15-07

Name

(Please Print)

Address

Telephone Number

Alternate Number

If we need to contact you, what is the best way? Phone

## Using your own words.

1. How does the site impact you and your family? *We live within site of the contaminated property. We own property in town.*
2. What are your concerns or fears about the site? *It is an eyesore. The spread of contaminants.*
3. Is the EPA and/or the Michigan doing the right thing in St. Louis?  
If not, what can we do better? *Please restore the property to normal use. Tear down the monument that the site has become.*
4. What is your vision of the site 5 or 10 years from now? *Hopefully no fence around the site.*
5. How do you get current site information? *Paper & local meetings.*
6. Have you used the site information in the public library? *No*
7. Do you think this EPA/DEQ team is truthful? *Yes*
8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?  
Comments. *Yes*
9. Where do you get most of your local (non-site) information? *Paper & local officials & meetings.*
10. How can we get site information to you and the public better? *News letters*

What do you want us to know? (any subject)

*Please remove all contamination and with it the fears and potential problems that may lie ahead if nothing is done.*

*Big River location*

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

## Velsicol Chemical 5 Year Review – Public Interviews

Date 5-15-07

Name \_\_\_\_\_

(Please Print)

Address \_\_\_\_\_

Telephone Number \_\_\_\_\_

Alternate Number \_\_\_\_\_

If we need to contact you, what is the best way? phone

**Using your own words.**

- 1. How does the site impact you and your family?**
- 2. What are your concerns or fears about the site?**
- 3. Is the EPA and/or the Michigan doing the right thing in St. Louis?**  
**If not, what can we do better?**
- 4. What is your vision of the site 5 or 10 years from now?**
- 5. How do you get current site information?**
- 6. Have you used the site information in the public library?**
- 7. Do you think this EPA/DEQ team is truthful?**
- 8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?**  
**Comments.**
- 9. Where do you get most of your local (non-site) information?**
- 10. How can we get site information to you and the public better?**

What do you want us to know? (any subject)

[ATTACHED]

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

May 15, 2007

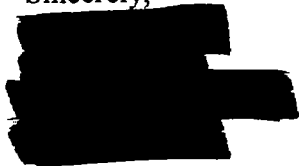
U.S. Environmental Protection Agency Staff:

How long will we keep squandering taxpayer dollars to "contain" rather than fix the serious problems presented by the former Velsicol Chemical site in St. Louis? Now is the time to clean up the St. Louis Superfund site entirely.

The citizens of St. Louis did not cause the pollution at the former Velsicol site, yet we live with the consequences every day. From the dangers associated with contamination, to the simple fact that one of our area's most beautiful resources, the Pine River, is not available for recreation, we are all suffering from the fact that the site has not been fully restored to usable land.

Please consider the needs of this community as you plan for the future of the St. Louis Superfund site. We need access to clean water that will not be contaminated by future leaks. We need the major access routes to our city to be inviting to visitors and potential investors. We need to know that our government cares about all environmental and quality of life issues, even those that exist in small communities like ours.

Sincerely,

A large, solid black rectangular redaction box covering the signature and name of the sender.

# Velsicol Chemical 5 Year Review – Public Interviews

Date 5/15/07

Name

(Please Print)

Address

Telephone Number

Alternate Number

If we need to contact you, what is the best way?

office

Using your own words.

1. How does the site impact you and your family?

financial impact -

2. What are your concerns or fears about the site?

Drinking water safety  
H<sub>2</sub>O

Some sufficiency

3. Is the EPA and/or the Michigan doing the right thing in St. Louis?

If not, what can we do better?

Review all soil

4. What is your vision of the site 5 or 10 years from now?

clean

5. How do you get current site information?

6. Have you used the site information in the public library?

no

7. Do you think this EPA/DEQ team is truthful?

Yes - except on occasion.

8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?

Comments.

Yes until "dressing around"

9. Where do you get most of your local (non-site) information?

10. How can we get site information to you and the public better?

What do you want us to know? (any subject)

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

# Velsicol Chemical 5 Year Review – Public Interviews

Date 5/15/07

Name

(Please Print)

Address

Telephone Number

Alternate Number

If we need to contact you, what is the best way? phone

Using your own words.

1. How does the site impact you and your family? - *Water Quality - Pine River & other waterways*
2. What are your concerns or fears about the site? - *That it won't get cleaned and it will forever be contaminated*
3. Is the EPA and/or the Michigan doing the right thing in St. Louis? *I think you are headed in the right direction to clean the mess up. Sometimes I feel you try to put a monkey wrench in the process. Too many studies. Get Busy*  
If not, what can we do better?
4. What is your vision of the site 5 or 10 years from now? *That it will be cleaned up and useful Community Real Estate. The river will be clean. Fish fry after the Derby*
5. How do you get current site information?
6. Have you used the site information in the public library? *No*
7. Do you think this EPA/DEQ team is truthful?
8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?  
Comments.
9. Where do you get most of your local (non-site) information?
10. How can we get site information to you and the public better?

What do you want us to know? (any subject)

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

## Velsicol Chemical 5 Year Review – Public Interviews

Date 5-

Name

(Please Print)

Address

Telephone Number

Alternate Number

If we need to contact you, what is the best way? Phone

Using your own words.

1. How does the site impact you and your family? WATER QUALITY
2. What are your concerns or fears about the site? THAT IT WILL GET WORSE
3. Is the EPA and/or the Michigan doing the right thing in St. Louis? NO  
If not, what can we do better? REMOVE THE SITE
4. What is your vision of the site 5 or 10 years from now? CLEAN WATER
5. How do you get current site information? I READ ABOUT IT
6. Have you used the site information in the public library? YES
7. Do you think this EPA/DEQ team is truthful? NOT ALWAYS
8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy? NO  
Comments. I KNOW THE SITE LEAKS. IT HAS FROM THE START
9. Where do you get most of your local (non-site) information? READING
10. How can we get site information to you and the public better? ASK QUESTIONS  
NEWS PAPERS

What do you want us to know? (any subject)

IT SEEMS LIKE A WASTE TO NOT FINISH THE  
JOB, WE HAVE SPENT A LOT OF MONEY AND WE  
SHOULD FINISH IT NOW RATHER THAN LATER. IT'S  
GOING TO HAVE TO BE DONE.

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

## Velsicol Chemical 5 Year Review – Public Interviews

Date 5-15-07

Name \_\_\_\_\_

(Please Print)

Address \_\_\_\_\_

Telephone Number \_\_\_\_\_

Alternate Number \_\_\_\_\_

If we need to contact you, what is the best way? \_\_\_\_\_

Using your own words.

1. How does the site impact you and your family? *Negatively my family that lives in other cities express concern for my health and my children*
2. What are your concerns or fears about the site? *That it is leaking into the city's water system*
3. Is the EPA and/or the Michigan doing the right thing in St. Louis? *NO*  
If not, what can we do better? *Clean up the Velsicol site completely*
4. What is your vision of the site 5 or 10 years from now? *No more contamination*
5. How do you get current site information? *From the City of St. Louis*
6. Have you used the site information in the public library? *NO*
7. Do you think this EPA/DEQ team is truthful? *YES*
8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy? *YES*  
Comments.
9. Where do you get most of your local (non-site) information? *City of St. Louis*
10. How can we get site information to you and the public better?

What do you want us to know? (any subject) *That the EPA did a good job cleaning the river and that they should totally clean up the Velsicol site and give St. Louis a clean bill of health*

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

7

## Velsicol Chemical 5 Year Review – Public Interviews

Date 5-15-07

Name \_\_\_\_\_

(Please Print)

Address \_\_\_\_\_

Telephone Number \_\_\_\_\_

Alternate Number \_\_\_\_\_

If we need to contact you, what is the best way? Call at \_\_\_\_\_ days

### Using your own words.

1. How does the site impact you and your family?

*My Grandchildren are wanting to grow up here. Would you want yours to?*

2. What are your concerns or fears about the site?

*More and continual contamination*

3. Is the EPA and/or the Michigan doing the right thing in St. Louis?

If not, what can we do better?

*Clear it up!*

4. What is your vision of the site 5 or 10 years from now?

*Clean-safe usable land*

5. How do you get current site information?

*Newspapers*

6. Have you used the site information in the public library?

*No*

7. Do you think this EPA/DEQ team is truthful?

*?*

8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?

Comments.

*yes*

9. Where do you get most of your local (non-site) information?

*Newspapers*

10. How can we get site information to you and the public better?

*Residential Mailings*

What do you want us to know? (any subject)

*Every time St. Louis is in the paper, it's bad news. We need some Good Press!  
We pay our taxes!*

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

## Velsicol Chemical 5 Year Review – Public Interviews

Date 5-15-07

Name

(Please Print)

Address

Telephone Number

Alternate Number

If we need to contact you, what is the best way? phone

### Using your own words.

1. How does the site impact you and your family? Damages the ecosystems in the area and has the potential to damage those down river.

2. What are your concerns or fears about the site?

I am concerned about the negative impact to the health of humans and wildlife.

3. Is the EPA and/or the Michigan doing the right thing in St. Louis?

If not, what can we do better? No, your original attempt at containment has not worked, chemicals have made it into drinking water wells.

4. What is your vision of the site 5 or 10 years from now?

For you to completely remove chemical contaminants from the site.

5. How do you get current site information?

Sierra Club Water Sentinels.

6. Have you used the site information in the public library? No

7. Do you think this EPA/DEQ team is truthful? Unsure, now that we have been waiting so long.

8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?

Comments.

yes credit "doing well"

9. Where do you get most of your local (non-site) information?

10. How can we get site information to you and the public better?

What do you want us to know? (any subject)

Hello, my name is [REDACTED] and I am from Saginaw. I first learned about this Superfund site a few years ago, when I volunteered for the Sierra Club Water Sentinel Pine River monitoring project. Since then I have been concerned about reports that chemicals are continuing to leak out of the site, despite your previous efforts to contain them. We all know that contaminated drinking water has negative impacts on the health of humans and wildlife. People here in St. Louis and the communities and wildlife habitats here and downstream deserve a thorough cleanup job at the old chemical site. Please do what your name implies - protect our environment and completely clean-up the problem. Thank you.

# Velsicol Chemical 5 Year Review – Public Interviews

Date 5-15-07

Name

(Please Print)

Address

Telephone Number

Alternate Number

If we need to contact you, what is the best way? PHONE

Using your own words.

1. How does the site impact you and your family? I HAVE LIVED WITH IN 2 BLOCKS FOR OVER 50 YEARS
2. What are your concerns or fears about the site? SAFE WATER - CLEAN RIVER HAUL IT AWAY FOR GOOD OR IT COULD KILL USE ALL.
3. Is the EPA and/or the Michigan doing the right thing in St. Louis? NO  
If not, what can we do better? THE RIGHT THING IS A TOTAL CLEAN UP
4. What is your vision of the site 5 or 10 years from now?  
NEW HOMES - TOTAL CLEAN UP
5. How do you get current site information?  
WEB - EMAIL
6. Have you used the site information in the public library?  
YES
7. Do you think this EPA/DEQ team is truthful? NO / NO *9 yrs ago - Reddy's tracks*
8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?  
Comments. NO - YOU LIE ABOUT THE WATER, THE RED DYE IN THE PLANT SITE, AIR SAMPLES,
9. Where do you get most of your local (non-site) information?  
WEB - CAG
10. How can we get site information to you and the public better?  
TV - WEB SITE *Contaminant in the H<sub>2</sub>O*

Public  
FOR MORE (ch 3) Alad

What do you want us to know? (any subject)

EPA HAS FAILED ON THERE OWN MISSION STATEMENT.

clean site up.

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

# Velsicol Chemical 5 Year Review – Public Interviews

Date 5/15/07

Name \_\_\_\_\_  
(Please Print)

Address \_\_\_\_\_  
\_\_\_\_\_

Telephone Number \_\_\_\_\_

Alternate Number \_\_\_\_\_

If we need to contact you, what is the best way? \_\_\_\_\_



Greater  
Gratiot  
Development, Inc.

136 SOUTH MAIN ITHACA, MICHIGAN 48847

*We administer the Brownfield Rev.  
Authority Co. of Gratiot*

E-MAIL

TELEPHONE

FAX

www.gratiot

## Using your own words.

1. How does the site impact you and your family?

*Personally - I own 5 duplexes on north side of river. Property is very difficult to find res.*

2. What are your concerns or fears about the site?

*Salve is questionable*

*Clean up drags on + on -*

3. Is the EPA and/or the Michigan doing the right thing in St. Louis?

*If not, what can we do better? Cleaning river is ok - unless site is addressed*

4. What is your vision of the site 5 or 10 years from now?

*Commercial on edge areas + rec. on central site*

5. How do you get current site information?

*from City*

6. Have you used the site information in the public library?

*not directly - my staff has*

7. Do you think this EPA/DEQ team is truthful?

8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?

Comments.

9. Where do you get most of your local (non-site) information?

10. How can we get site information to you and the public better?

What do you want us to know? (any subject)

*By nature the BRA process  
constituted the Superfund  
is even more confusing*

Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

Professional - I would like to be able to use Mich. Grounded process to create new development on site. It is my understanding that some of the prop. can readily be redew.

## Velsicol Chemical 5 Year Review – Public Interviews

9 Date 15 May 07

Name \_\_\_\_\_

(Please Print)

Address \_\_\_\_\_

Telephone Number \_\_\_\_\_

Alternate Number \_\_\_\_\_

If we need to contact you, what is the best way? Phone

Using your own words.

1. How does the site impact you and your family?

2. What are your concerns or fears about the site?

3. Is the EPA and/or the Michigan doing the right thing in St. Louis?  
If not, what can we do better?

4. What is your vision of the site 5 or 10 years from now?

5. How do you get current site information?

6. Have you used the site information in the public library?

7. Do you think this EPA/DEQ team is truthful?

8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?  
Comments.

9. Where do you get most of your local (non-site) information?

10. How can we get site information to you and the public better?

> City will continue to push for cleanup  
What do you want us to know? (any subject)

Clear all soil.

City has no input during Velsicol shut down —

future contamination-related problems  
call for help  
Jalil

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

## Velsicol Chemical 5 Year Review – Public Interviews

Date

5/5/07

Name

[REDACTED]

(Please Print)

Address

[REDACTED]

Telephone Number

[REDACTED]

Alternate Number

[REDACTED]

If we need to contact you, what is the best way?

\_\_\_\_\_

### Using your own words.

1. How does the site impact you and your family? *Directly — I live within 2 blocks of the site*
2. What are your concerns or fears about the site? — *that another patch job will be done — get the contaminants out completely*
3. Is the EPA and/or the Michigan doing the right thing in St. Louis?  
If not, what can we do better? *No — remove the source before you continue working on the river bed*
4. What is your vision of the site 5 or 10 years from now? *More completely*
5. How do you get current site information? *Followed this from the beginning*
6. Have you used the site information in the public library? *yes*
7. Do you think this EPA/DEQ team is truthful? *Sold out by the state years ago — Any competent engineer would know over time the site would leak*
8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?

Comments.

9. Where do you get most of your local (non-site) information? *local officials, documents, public hearing —*
10. How can we get site information to you and the public better?

What do you want us to know? (any subject)

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_



SIERRA  
CLUB  
FOUNDED 1892

## MICHIGAN CHAPTER

---

15 May 2007

Attn: Rebecca Frey, Remedial Project Manager  
USEPA Region 5 Headquarters  
77 W. Jackson Blvd.  
Chicago, Illinois 60604

RE: Comments of the Michigan Sierra Club regarding USEPA Region 5 recent Pine River and St. Louis Impoundment Sediment Removal Actions  
VELSICOL CHEMICAL CORP. (MICHIGAN), EPA ID# MID000722439

Dear Ms. Frey,

The Sierra Club Michigan Chapter commends the U.S. Environmental Protection Agency and your consultants for the initial success of its recent remedial activities in the Pine River adjacent to the Velsicol Chemical Corporation Superfund Site. It's been stated many times by USEPA project managers that the Velsicol Chemical Corp. site on the Pine River is an extremely high priority for USEPA Region 5. It's been inferred that the site is THE top priority for cleanup in Region 5. **It is likewise an extremely high priority for residents, Pine River riparian owners, and for people living in areas downstream, as well.**

The residents of the City of St. Louis and all those downstream are surely grateful that the first step of the process of cleaning up their river has begun. But much remains to be done. Back in 1974 when the state of Michigan first placed the fish-consumption ban on the Pine, surely it wasn't expected that the consumption ban would still be in place over 30 years later! The fish-consumption ban was never intended to be the long-term solution for dealing with the chemicals in the fish and in the river sediments. We also know that area residents are fishing from the river, and we know that area residents are eating the fish they catch. Since the consumption ban is only an advisory, we know there is no legal way to force anyone to stop eating the fish. Therefore, we need to clean up the contamination sources.

We know that:

- The Pine River is a public trust resource. Cooley Law professor Chris Shafer stated the following in his presentation to the Wetlands 2006 International Symposium of the Association of the State Wetland Managers, (located at <http://www.aswm.org/calendar/wetlands2006/shafer.pdf>)

In extending the public trust doctrine into Michigan's navigable rivers, the Michigan Supreme Court described the trust in 1926 as follows: "So long as water flows and fish swim in Pine River, the people may fish at their pleasure in any part of the stream subject only to the restraints and regulations imposed by the State. In this right they are protected by a *high, solemn and perpetual* trust, which it is the duty of the State to forever maintain." *Collins v. Gerhardt*, 237 Mich. 38, 49 (1926) (emphasis in original.)

Yet, for decades, the community of St. Louis, Michigan, has been unable to safely enjoy beneficial uses of the Pine River such as swimming and fishing. Farmers located along the river use its waters for irrigation and for watering livestock – yet no one understands the effects on human health from eating those crops or consuming the animal products.

- EPA wants this site dealt with once and for all. **Even more importantly, so do local residents and the state of Michigan.** Reference comments in a May 2, 2004 letter from EPA Region 5 Acting Director Richard C. Karl to Andrew W. Hogarth, Chief of MDEQ RRD, "*EPA stressed at the January meeting the need to look at the site holistically rather than only looking at OUI as defined by its land boundaries. The USEPA intends this as the last ROD for the site; as such it must address all remaining action needed to*

*complete the cleanup of the site.*” Simple. Indeed, as such, all contamination sources must be removed, once and for all. The remedy selected by USEPA must be permanent and it must meet with community approval - the only logical solution would be to remove the contamination.

- The press has reported that USEPA has spent \$100 million to remove contaminated sediments from the river adjacent to the former plant site. To protect against recontamination, all contaminants from the former plant site must be removed, once and for all. Since Superfund is no longer being funded via a tax on polluting industries, the money won't flow freely forever. Do it right now and just git 'er done.
- There is much uncertainty as to the additive and synergistic human health effects of the chemicals. Most critically, impacts to pregnant women, their unborn children, to developing adolescents in puberty, and to immune-suppressed individuals, are not well-known let alone understood. The exposures have already occurred over many decades – it's time to stop the science experiment! All contamination sources must be removed, once and for all, to end the “science experiment” keep-your-fingers-crossed-that-nothing-happens-to-you approach.
- We know that the drinking water wells of the City of St. Louis have already been contaminated with pCBSA, a chemical harbinger of what may come later (or sooner.) Given this, all contamination sources must be removed, to avoid further migration of contamination to the river and of the public drinking water supply.

**The only logical solution is that the rest of the contamination must be removed as well.**

**We urge USEPA to:**

- 1) Remove all sources of contamination from the former plant site, including in and around the site boundary in the adjacent neighborhoods.**
- 2) Remove all contamination from the rest of the Pine River.**
- 3) Investigate whether any of the contamination has migrated beyond the confluence of the Pine and the Chippewa River. If so, clean up there as well.**

Again, we commend USEPA on the first steps taken to clean up the Pine River. We look forward to hearing about more Pine River and former plant site cleanup accomplishments.

Sincerely,  
Rita Jack

  
Water Sentinels Project Director  
Clean Water Advocate

cc.

Debbie Stabenow, US Senate  
Carl Levin, US Senate  
Dave Camp, US Congress  
Steve Johnson, U.S. EPA Administrator  
Richard Karl, Superfund Division Director  
Jennifer Granholm, Governor  
Steve Chester, MDEQ Director

Roger Kahn, State Senator  
Paul Opsommer, State Representative  
George Kubin, Mayor, St. Louis, Michigan  
Jane Keon, Pine River Superfund Citizens Task Force  
Dianne and Murray Borrello, Pine River Superfund Citizens Task Force  
Scott Cornelius, MDEQ

# Velsicol Chemical 5 Year Review – Public Interviews

Date 5-15-07

Name \_\_\_\_\_

(Please Print)

Address \_\_\_\_\_

Telephone Number \_\_\_\_\_

Alternate Number \_\_\_\_\_

If we need to contact you, what is the best way? PHONE

GAVE UP HIS  
INTERVIEW  
SPOT FOR  
OTHER  
PEOPLE

## Using your own words.

1. How does the site impact you and your family? IT CAUSED ME TO TAKE ACTION BY GETTING INVOLVED. TO DO EVERYTHING I CAN DO TO CORRECT THE WRONGS DONE TO OUR COMMUNITY. PAST, PRESENT & POTENTIAL IN THE FUTURE.
2. What are your concerns or fears about the site? LEAVING CONTAMINATION IN PLACE CAUSING POTENTIAL HEALTH CONCERNS, THE STIGMA OF A POLLUTED COMMUNITY, THE EPA/DEQ LEAVING US WITH THE SAME MESS WE HAVE.
3. Is the EPA and/or the Michigan doing the right thing in St. Louis? I CAN'T SAY UNTIL YOU DO IT.  
If not, what can we do better?  
YOU CAN DO IT RIGHT THIS TIME.
4. What is your vision of the site 5 or 10 years from now? TOTAL-BLEAN-UP!  
USE IT ANYWAY WE WANT.
5. How do you get current site information? NEWSPAPER, INTERNET, CAG MEETINGS, NEWSLETTERS
6. Have you used the site information in the public library? YES - SPENT MANY HOURS LOOKING THRU HISTORICAL INFO THAT IS PARTIALLY MISSING.
7. Do you think this EPA/DEQ team is truthful? NOT ALWAYS, WHY KEEP THE PCB SA FROM US? WHAT ABOUT AIR SAMPLES? WHAT ABOUT NAPl? WHAT ABOUT THE TEMPORARY INTEREM INTERCEPTOR TRENCH?
8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?  
Comments. I WANT TO BELIEVE. HELP ME BELIEVE.
9. Where do you get most of your local (non-site) information?  
EPA WEB SITE - INTERNET SOURCES
10. How can we get site information to you and the public better?  
IF "WE" IS BOB & BECKY YOU CAN DO WHAT YOU KNOW IN YOUR HEART IS THE RIGHT THING. DO WHAT YOU WOULD WANT DONE IF THIS WAS IN YOUR SMALL TOWN COMMUNITY. DO THE THINGS WORKERS WANT DO YOU WANT US TO KNOW? (any subject)  
DO IF THEY WANT TO CHANGE THEIR EMPLOYERS WRONG-FULL THINKING. WORK FOR US. MAKE THE RIGHT THING HAPPEN. HELP US MAKE THE RIGHT THING HAPPEN.

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

## Velsicol Chemical 5 Year Review – Public Interviews

Date \_\_\_\_\_  
Name \_\_\_\_\_  
(Please Print)  
Address \_\_\_\_\_  
Telephone Number \_\_\_\_\_  
Alternate Number NA  
If we need to contact you, what is the best way? phone

### Using your own words.

1. How does the site impact you and your family? *affects our insurance Business  
River Restriction, comfort zone is impacted & family*
  2. What are your concerns or fears about the site?  
*that it will not be clean up satisfactory*
  3. Is the EPA and/or the Michigan doing the right thing in St. Louis? *not present to  
feel impact as such*  
If not, what can we do better?
  4. What is your vision of the site 5 or 10 years from now?  
*NA*
  5. How do you get current site information?  
*tail force, Pagan -*
  6. Have you used the site information in the public library?  
*for other sites*
  7. Do you think this EPA/DEQ team is truthful? *yes but not all  
inclusive*
  8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?  
*Political  
restrictions*
- Comments.
9. Where do you get most of your local (non-site) information? *Bar there it done that*
  10. How can we get site information to you and the public better?  
*web site*

What do you want us to know? (any subject)

*need more collaboration between the entities  
that fund project areas -  
internet -*

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

## Velsicol Chemical 5 Year Review – Public Interviews

Date 5/15

Name \_\_\_\_\_

(Please Print)

Address \_\_\_\_\_

Telephone Number \_\_\_\_\_

Alternate Number \_\_\_\_\_

If we need to contact you, what is the best way? e-mail

Using your own words.

1. How does the site impact you and your family?

*Concern over water quality*

2. What are your concerns or fears about the site?

*Pollution seeping into the river & ground water*

3. Is the EPA and/or the Michigan doing the right thing in St. Louis?

If not, what can we do better?

*Clean it up*

4. What is your vision of the site 5 or 10 years from now?

*Useable land for the city*

5. How do you get current site information?

*Newspaper*

6. Have you used the site information in the public library?

*NO*

7. Do you think this EPA/DEQ team is truthful?

*Yes*

8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?

*Comments. Yes. However, Sometimes decisions are made with \$1 in mind and not public health*

9. Where do you get most of your local (non-site) information?

10. How can we get site information to you and the public better?

What do you want us to know? (any subject)

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

# Velsicol Chemical 5 Year Review – Public Interviews

Date 5/15/07

Name

Address

Telephone Number

Alternate Number

If we need to contact you, what is the best way? email:

*Handwritten:*  
Hanson  
Teacher  
Physical Science  
(Post)  
Physics

## Using your own words.

1. How does the site impact you and your family? *hampers fishing on Pine River downstream from St. Louis; water quality*
  2. What are your concerns or fears about the site?  
*continued contamination of the area, possible groundwater contamination*
  3. Is the EPA and/or the Michigan doing the right thing in St. Louis? *yes*  
If not, what can we do better? *Finish the clean-up*
  4. What is your vision of the site 5 or 10 years from now?  
*Safe chemical in place*  
*Once clean-up is completed → beautiful residential area, may be a riverfront restaurant*
  5. How do you get current site information?  
*City of St. Louis very occasionally*
  6. Have you used the site information in the public library?  
*no / not aware of it*
  7. Do you think this EPA/DEQ team is truthful?
  8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?  
*Hope - no opinion*
- Comments.
9. Where do you get most of your local (non-site) information?
  10. How can we get site information to you and the public better?  
*E-mail*

What do you want us to know? (any subject)

*Limitations →*

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_

## Velsicol Chemical 5 Year Review – Public Interviews

Date 5-16-07

Name

(Please Print)

Address

Telephone Number

Alternate Number

If we need to contact you, what is the best way?

Using your own words.

1. How does the site impact you and your family?
2. What are your concerns or fears about the site?
3. Is the EPA and/or the Michigan doing the right thing in St. Louis?  
If not, what can we do better?
4. What is your vision of the site 5 or 10 years from now?
5. How do you get current site information?
6. Have you used the site information in the public library?
7. Do you think this EPA/DEQ team is truthful?
8. Do you feel the EPA and/or the Michigan DEQ is credible or trustworthy?  
Comments.
9. Where do you get most of your local (non-site) information?
10. How can we get site information to you and the public better?

What do you want us to know? (any subject)

*Political issue*

## Velsicol Chemical 5 Year Review - Public Interviews (Responses)

Name \_\_\_\_\_

Date \_\_\_\_\_



[REDACTED]  
05/15/2007 02:13 PM

Please respond to  
[REDACTED]

To REBECCA FREY/R5/USEPA/US@EPA

cc

bcc

Subject 5-year review comments

History:

✉ This message has been replied to and forwarded.

Becky -

I am not able to be at the interviews today because I am in Argentina with a class. I have attached my written comments to be included in the record.

[REDACTED]



- 5-year\_comments.doc

# MEMO

To: Environmental Protection Agency

From: [REDACTED]

Date: May 15, 2007

Re: Comments for 5- Year Review at St. Louis Superfund Site

I would like to submit comments for the 5-year review of the cleanup at the St. Louis, MI Superfund site. I apologize for this type of submission, but I am in Argentina for a class and not able to attend the community interviews.

I have been involved with the cleanup from the beginning. I am currently a member of the Pine River Superfund Citizen Task Force and serve as the co-Secretary. I am also a member of the technical committee. I am a Professor of Chemistry at Alma College and have used various aspects of the project in classroom and research activities.

I want to thank the EPA for the work they have done to this point. They have been responsive to community concerns and have done what seems to be a good job in the cleanup of the river. We are happy for the time and effort to do this difficult project.

There are a few concerns however. When the EPA was pursuing the pCBSA question, they created more problems than they needed to by not keeping the community fully informed. Because the community was not even aware the work was being done, the release results provided an unintended backlash. If the EPA had informed the community they were looking for this chemical and the rationale behind the study, when the results were released a year and a half later, there would not have been the surprise and outcry that resulted. The community would have had time to process the information on pCBSA in advance and when the validated results were finally released have had an idea of what the levels meant. Not releasing the results until they were fully validated was not inappropriate, just not informing the community of the study. This is a community that has not been treated well by a number of government agencies and they are rightly suspicious when more bad news is relayed to them.

We appreciate the fact that the cleanup was finished a year earlier than expected. However, this non-productive year is annoying to some of the citizens. I understand why you cannot get in and start digging this year, but if the RI/FS work had been done in a more timely fashion, this would not have happened. We feel that feet were dragged in this process.

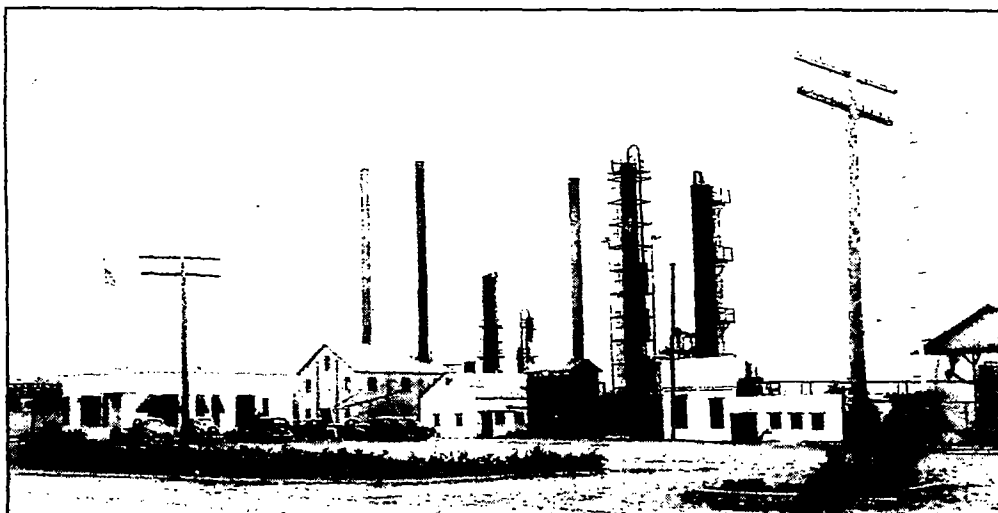
Finally, I know a total cleanup of the plant site will be expensive, but I want to push, along with the rest of the community, for a total cleanup. You have spent over \$100 million dollars cleaning up the river. A cap and slurry wall did not work last time. I see no reason why it will work this time. We know the bottom till is not as impermeable as

was expected and cannot form a lower barrier. Pumping the site can only do so much. This site needs to be completely cleaned up to remove any chance of future re-contamination of the river. It will also create goodwill in a community that has been hammered by industry and the government for many years.

Make St. Louis into a model community that the EPA can point to as an example of the little community that could. Those of us in small communities feel marginalized most of the time because of the perception that we don't count with big agencies. We don't have very many people, so we can be ignored. You already know that we can make a big noise – make it a positive noise for yourself and for us.

Dave  
McMackin's

History  
book



*McClanahan Refineries were built by wildcatter Walter "Mac" McClanahan to process oil from the Porter Oil Field. The refinery stood next to M-46 and the Pine River. The refinery was absorbed by Leonard Refineries, and later Michigan Chemical purchased the site.*

Company of Saginaw was building the line. The pipe would run to a loading dock beside the railroad spur at the Sugar Company. There tanker cars would be filled with crude oil for shipment to the Peerless Refinery in Saginaw.

Rumors were rife regarding all kinds of oil prospects. In 1933 the discovery of the Joe Ottaway No. 2 well in Porter Township of Midland County, a few miles northeast of St. Louis, signaled the discovery of a major new oil field—the Porter Field. This oil development would transform St. Louis.

As wells opened up in the Porter field, more roustabouts and their families arrived in Central Michigan seeking work. They came from West Virginia, Tennessee, Texas, and Oklahoma. Many were housed in temporary quarters in the Porter Field. They sensed a lack of welcome in St. Louis, perhaps because of their distinctive speech, but also because they reflected a certain roughness. The newcomers sometimes clashed with the natives at local bars, and a prejudice developed—a negative feeling transmitted to the workers' children who were suddenly thrust into local schools. Money was also an issue. The "invaders" were making money from their hard work at the oilwells while many locals were looking for work during the hard times.

The proliferation of oil wells created a major problem. The wells produced oil faster than it could be shipped to refineries. Independent oil producer Walter "Smiling Mac" McClanahan suggested that he would built a refinery at Wheeler next to the railroad. McClanahan had 36 producing wells and needed more refining capacity. Then he suddenly abandoned this proposal, announcing instead that his refinery would be built in St. Louis.

It rose on the east side of the river, north of Washington Street. A railroad spur was run across Washington (M-46) to accommodate the new plant. In February 1935 McClanahan was ready to test the refinery with oil that had been trucked in. He was arranging to tap into the pipeline that ran from the Porter Field to the new Midwest Refinery in Alma. On March 1, 1935, the first tankcar of manufactured products left the McClanahan Refinery on the Pere Marquette tracks.

Soon the refinery was handling 45,000 to 50,000 barrels of crude oil a month, and in October plans were made to increase production to 100,000 barrels a month.

By 1938 McClanahan had 50 employees and was producing gasoline, kerosene, and fuel oil. Most of the asphalt road topping for WPA projects in Michigan came from this refinery.

Across the river to the west, another refinery was being built near the tileyard. It was financed by St. Louis and Alma businessmen. The Central Michigan Oil Refinery entered production at the same time as McClanahan's, but it was a small operation and could process only 500 barrels of oil a day.

Soon St. Louis and Alma were influenced by discovery of the Crystal Field in Montcalm County. In February 1936, it was announced that the McClanahan Refinery would become part of the newly-organized Leonard Refineries. Whereas a few years before, there was not enough refining capacity in the area, by 1936—with several refineries in both Alma and St. Louis—there was more than enough. Eventually, with the decline of the Porter and Crystal oil fields, the refineries in St. Louis were not needed and were closed and dismantled.

### **Detroit Mobile Homes**

In the late 1940's joining the growing industry of mobile home manufacturing, the Detroit Coach Company was organized in Wayne, Michigan. Lacking room for expansion, it moved to St. Louis and chose the former Bollstrom Truck plant on Virginia Street for its new home.

The popularity of mobile homes grew rapidly, and the company underwent three expansions, with the workforce increasing to 100. The homes being produced in the 1950s were up to 46 feet long, and a typical home contained amazing conveniences - a bathroom, refrigeration, and hot water.

In 1954 the company was reorganized as Detroit Mobile Homes Mfg., Inc. New personnel were brought into the company, sales increased, and soon the company was employing 300 workers. Melvin J. Hutchinson was chairman of the board of the company, and the CEO was John Trask.

Additional property was purchased at 115 West Washington St., and this was designated as plant No. 2, where smaller models were built. In 1960 the company's first private stock offer was to be used in part for its subsidiary Mobile Home Finance Company, which offered financing and insurance to mobile home buyers.

This was not the last expansion of Detroit Mobile Homes. In 1961 DMH bought the Alma Trailer Company, one of the earliest manufacturer of house trailers in the area. DMH had seen phenomenal growth of 855% in seven years. It had quickly become one of the largest mobile home manufacturers in the nation.

DMH expanded into other plants in Alma, and ran six plants in other parts of the country. A company that started with 50 employees in St. Louis had more than 2,000 employees by the mid-1970s.

Alert to changes in the industry, the company used steel-bond construction to replace the familiar wooden framing that had been the industry standard. The new homes cost more but ~~they were more substantial and helped keep the company on the cutting edge in the industry~~ Eventually, production moved to plants in other areas of the country. Expenses were less for the company, and the factories in Alma and St. Louis were shut down.

### **Foundries**

The earliest foundry in St. Louis was located on the millrace where it emptied into the Pine River near the Main Street Bridge. It was part of the sawmill-gristmill-mineral springs complex along the river. The foundry was the victim of fire May 27, 1896, and was not rebuilt.

In 1921 another foundry was established by St. Louis businessmen. Known as the Gratic Foundry Association, it stood at the end of Crawford Street on the bluff above the mill pond. A rail spur running to the property allowed the company to ship its castings.